

THE LIBRARY OF THE
UNIVERSITY OF
NORTH CAROLINA



THE COLLECTION OF
NORTH CAROLINIANA

C630.5
A66
v.1-3

**This book must not
be taken from the
Library building.**

--	--	--



Digitized by the Internet Archive
in 2012 with funding from
University of North Carolina at Chapel Hill





THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, APRIL 2, 1855.

NO. I.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, *in advance*, or \$1.50 if *not paid until the end of the year*.

Advertisements, not exceeding twelve lines, for each and every insertion, one dollar—containing more, at the same rates.

TO THE FARMERS AND MECHANICS OF NORTH-CAROLINA.

In taking charge of an Agricultural Journal, and entering upon its editorial duties, we are not treading a strange, but tried and familiar sphere of action, with the grateful exception of having divested ourself of every thing connected with party politics, and appearing before the public in a capacity in which we may freely and frankly commune with our fellow-citizens of all ranks and parties, as friends and coadjutors in one common cause: and we cannot but rejoice that, instead of fighting in a heated and dusty arena, we shall luxuriate in blooming fields, and balmy air, and quiet cottages, and draw animation from humming shops and bustling markets.

We flatter ourself, in the prosecution of this work, as we shall assiduously labor to impart information and pleasure, that we shall contribute a mite in promoting "the common good and general welfare;" and shall receive, in return, satisfactory and substantial evidence of the public appreciation of our efforts; for our principles, objects and policy will be so interwoven with the web of every man's prosperity and happiness, that all readers will be interested in its pages and serve themselves by contributing to its support.

But deeply concerned as we are for the success of these objects, and delightful as is the task assumed,

we could not have ventured to embark in this undertaking, had we not been solicited and urged to it by a number of the most intelligent and influential members of the State Agricultural Society and other friends of the cause, with the assurance of their hearty and active support of the work. Relying upon the fulfilment of their pledges and upon the liberality of the public, we now lay our hands to the plough, with the determination never to "look back."

Our aim is to furnish the Farmers and Mechanics of North-Carolina with a paper devoted exclusively to their improvement and interests. There are numerous periodicals, published in other States, devoted to these subjects, which are read, too, with profit by many of our people; but none of them fully meet their wants. They need, and must have, a *home journal*, acquainted with the peculiarities of their situation, and devoted entirely, first and last, and all the time, to their peculiar interests. Such, it is intended, shall be "THE NORTH-CAROLINA ARATOR."

It will endeavor to fulfil its mission, 1st, by supporting the State Agricultural Society and all County Associations in their patriotic and laudable efforts to advance all the industrial pursuits and interests of North-Carolina; 2nd, by collecting and publishing from our own most skillful and successful agriculturists, the best methods of cultivating, manuring, and otherwise improving the land, and of managing every branch of husbandry in our own State; 3rd, by presenting a view, so far as it can be culled from the best sources, of the same things in other parts of the world; and, 4th, by stimulating our most reliable practical men to work out from the whole a system of *practical agriculture* of our own, suited to our own locality and condition.

That such a system is the great *desideratum*—the one thing needed among us, all must acknowledge.—We have peculiar institutions, peculiar soil and climate, peculiar staple products, and must therefore have a peculiar system of agriculture, wrought out from the lights of experience and science, gathered from home as well as abroad—aye, in many important particulars, we must have an agricultural code and practice of our own; and it must be formed by attrition and consultation with, and help from one another. While England and the North raise wheat, clover, Timothy, Irish potatoes, onions and beans, we must rely mainly upon cotton, tobacco, corn, the small grains, peas, rice, sweet potatoes, and, ultimately, sheep and wool. We should seek to ascertain the rotations in which they should follow each other, with the least exhaustion of our lands; the best fertilizers within our reach; the best method of draining; and the most effectual means of preventing the washing and other deteriorations of our soils; for we cannot, as a general thing, rely upon guano and other foreign substances, though in some instances and localities they may be, and have been, used with signal advantage.

A judiciously conducted paper, devoted to these ends, regularly appearing, cannot fail to be a useful auxiliary in their consummation. Why should not the FARMERS AND MECHANICS have an organ? Why should they not resort to the press for aid? There are many things interesting and valuable to them, which they desire to preserve for reference, to communicate to others, to demand from their Government, and to transmit to their posterity: and the press is the cheapest, easiest, and, as to much valuable information, the only medium through which these things can be accomplished. Its advantages and importance are well understood by all other professions and parties, and they have their well supported newspaper organs: indeed, the press is universally regarded as the palladium of our liberties; and who can be so blind as to suppose this powerful engine cannot be profitably employed in the cause of agricultural and mechanical improvement—in bringing out the materials of greatness and independence by which we are surrounded—the two grand and definite objects of our State Agricultural Society?

Too much must not be expected from books and papers; nor from new methods of improvement. Men are prone to extremes; and if the extravagant hopes of an excited imagination are not quickly realized, they rashly dash to the ground a reasonable prospect of solid good. Agricultural improvements must be slow in progress. While aiming at much, we must be encouraged with little, and labor for more with patience, diligence and perseverance—having our

purposes strengthened with the sentiment, that
*"Not to go back is somewhat to advance—
 Men must learn to walk at least before they dance."*

Thus we shall not be flattered with expectations that can never be satisfied, shall not be tossed with unstable resolutions, shall not be deluded by specious theories, shall not be led astray by untested science, shall not be easily discouraged; and shall finally realize that "it is more pleasing to see smoke brightening into flame, than flame sinking into smoke."

The opposite extreme is found among those who are denominated anti-book and anti-scientific farmers. It is an error which is very difficult to correct, and believed by some to be incurable; but while we profess to have no universal *panacea* for all the errors to which the farmer is heir, we have much hope of a cure in this case. This class of men are honest, but they judge *par prévention*—through prejudice: yet they are interested in learning the truth; discussion will gradually unfold truth to their minds; their prejudices will give way; and the truth will make them free. Hence, many of them, though late, will adopt the best scientific methods of their art, prosecute them with vigor, (for when they know they are right they go ahead like a locomotive,) and at last be found running the race of improvement successfully with their neighbors.

Such men have habituated themselves to look upon book and scientific farming in connexion with abstract principles, speculative opinions, and visionary projects. Here lies their stumbling block. But they are mistaken. No branch of science and art can be made responsible for the miscarriages of ignorant or rash pretenders. *True science is always useful in every branch of business.* It is a knowledge of immutable principles and truths, brought to light by discovery, which are applied by the inventive genius and skill of man to valuable practical purposes. All the works of art are based upon and aided by science. The construction of a watch, the taking of a daguerreotype, the making of a carriage, and the erection of a house, are all operations of art; yet they all have their foundation in a certain acquaintance with philosophical principles and mathematical rules. Artists who conduct their operations with a perfect knowledge of principles, are rightly called scientific; while those who experiment at random, or blindly follow the footsteps of others, are termed empirical; and although both may sometimes fail, through human weakness or other misfortunes, the chances of success are ten to one in favor of the man of knowledge. The application of science to the arts, has been the means of saving time, expense, and labor in every department of human industry. Within the recollection of many whom we now address, new lights have been applied to established arts, new inventions have dropped from the hand of science, and new arts

have sprung from philosophical investigation, carrying with them consequences that have electrified the industry and changed the aspect of the civilized world. *Agriculture* is an art, which has its scientific principles, relating to soil, climate, plants, animals and labor; and, in the language of Professor Johnson, "this wide field of science, over which the practical farmer may travel with advantage, becomes wider and wider with every step that he takes." Never at any former period was so large a portion of the talent and enterprise of the world employed in the practical application of science to the agricultural and mechanical arts; and never with more encouraging results. Let this important work be continued with caution, by competent minds, and the great art, which gives life and support to all other arts, will be gloriously advanced, and all engaged in its pursuit elevated and improved, in proportion as they **READ, STUDY AND PRACTICE.**

ROTATION OF CROPS.

Every farmer knows this means simply a change of crops; but every farmer has not studied and learned its importance: and yet it will be seen, upon an examination of the subject, to be one of the first and most necessary steps to be taken to arrest *exhaustion* and preserve the fertility of the soil.

Rotation is a great conservative principle of nature; and its wisdom and propriety are acknowledged by all the works of creation except two—the one being a species of political *pap-sucker*, known as the *parasite office-holder*; and the other, the inveterate enemy of agricultural improvement, known as the *anti-book farmer*. But, alas for these! both are doomed to perish or *travel*! Under the immutable law, the one will be *rotated out*, despite of his piteous protestations, and the other will find himself *out at the pocket, out at the crib, and out at the larder*.

Let us examine a little into this principle, in its application to agriculture. Every plant contains a number of different substances, or elements, in greater or less proportion, according to its nature, which it extracts from the soil. Each requires a particular substance, peculiar to itself, in large quantities; and the continual growth of it will exhaust the soil of that substance, just as the unceasing labor of the horse, ox or man, will exhaust his strength and life, unless he is regularly rested and supplied with food to renew his wasted energies. Any crop, therefore, cultivated for a regular succession of years, in a given field, will take from it the elements which enter most largely into the crop, and leave it, in a few years, unfit for the production of that crop, and, if a thin soil, barren as to other crops; for although this is what is termed *special exhaustion*, and at first weakens the land only in respect to the crop raised, if it be too long continued, or too often re-

peated, it will *kill* the land, like too much bleeding, though it be withdrawing but a single *equivalent* from the *animal compound*, will certainly destroy the force and vitality of the body.

In addition to this, there is another cause of decline, when crops are grown too often on the same land. The science of vegetable physiology, "has established the fact, that plants, like animals, have, in addition to a digestive apparatus through which they are sustained and developed, also a system of excretory organs, through which, as through the emunctories (pores of the skin, kidneys, &c.) of the human body, all noxious substances, and such as are insusceptible of assimilation, are expelled by their roots." These refuse elements, which are taken into their bodies from both earth and air, and thus returned to the earth, become poisonous to themselves and to other plants of the same species; and for this reason, with the foregoing, some plants cannot be grown after themselves for years. Clover, for instance, in some soils, cannot be grown after itself in 6 to 12 years; flax, in 2 to 3, &c. The length of time seems to depend, in part, on the time required for the decomposition of their excrementary deposits. This will take place more rapidly in a calcareous soil, for the attraction of oxygen and tendency to decompose are increased by contact with alkaline constituents, and by a porous soil which the air may freely penetrate. Plants of a different nature may not only not be injured by this deposit, but benefitted, after its decay, that is, the cereals may make a deposit beneficial to the leguminous family of plants, and *vice versa*. Experiments have been made proving this. We give the experiment of Macaire Princep, as follows: "He found that the water in which plants, as the family of the Leguminosa were grown, acquired a brown color. Plants of the same species placed in water, impregnated with these excrements, were impeded in their growth, and faded prematurely, whilst, on the contrary, corn plants grew vigorously in it, and the color of the water diminished sensibly, so that it really appeared that a certain quantity of the excrements of the leguminous had been absorbed by the corn plants."

But to return to the first and principal cause of decline—Oats are generally believed to be a great exhauster; but there is a diversity of opinion as to the cause of it. It is not so much, as many suppose, owing to the rapid growth of the plant, and consequent heavy tax upon the land, in a short time, as it is to the substances it withdraws from the soil, and the close and long continued pasturing which follows, of hungry swarms of animals, which eat up the remaining substance of the land; whereas they should only be allowed to pasture long enough to glean the leavings of the scythe. Oats take from the land a larger quantity of potash and lime, more

sulphuric acid, nearly three times as much silica and almost as much phosphoric acid, as wheat. These elements are found in the two productions, upon an analysis of the whole plant according to Professor Johnson—high authority—in the following proportions:—

Composition of the Ash from Grain and the Straw & Husks.

	Percentage.	
Potash,	23.72	Wheat,
Soda,	9.05	
Lime,	2.81	Straw of Wheat,
Magnesia,	12.03	
Oxide of Iron,	0.67	Oats without husk,
Oxide of Manganese,	1.30	
Phosphoric Acid,	3.07	Straw of Oats,
Sulphuric Acid,	49.81	
Chloride,	0.24	Husk of Oats,
Fluoride of Sodium,	1.09	
Alumina,	63.38	Rye,
Silica,	1.17	
		Straw of Rye,
		Peas,
		Straw of Peas,
		Turnips,
		Potatoes,

Here, then, is the true reason, added to the peculiar excrement deposited by it in the earth, why the oat crop impoverishes the soil; and whoever is disposed to profit from the hint, will turn the knowledge of this fact alone into five times the worth of a year's subscription to the ARATOR. For by proper management, exhaustion may be prevented; and land already exhausted in this way, may be revived, if not *too far gone*, by resting and restoring to it what has been taken away, by the application

of fertilizers or manures containing the lost properties; and it may be preserved from deterioration, for the time to come, by a judicious system of rotation; carefully guarding, in all cases, against *washing*, one of the greatest moths to land; and if rested regularly and aided by a little manure, or the turning in of green crops, (peas or clover, or even grass and weeds) may be kept in an improving condition. Let a manure, to follow oats, be made in the following proportions: 9 bushels of ashes, and half a bushel of lime, 3 or 4 bushels stable manure, to be composted for 4 weeks with 25 bushels of rich woods mould, or rich deposits from the margins of the water courses of the farm, and then broad-casted over the land, at the rate of only 8 two horse loads to the acre—(the more the better)—and the stubble, weeds and grass all turned under together, early in the fall, we will guarantee a decided improvement in the next year's crop, whether of corn or cotton; and this process, continued, will keep the land constantly improving in fertility, paying ten-fold for the labor and expense attending it. If the lime cannot be easily obtained, it may be omitted and a little more good strong ashes added. The farmer has all these means of improvement, if the lime be left out, on his own land. A little extra industry in burning ashes and hauling out 8 loads of manure to the acre, and his expenses will not be increased a farthing. But observe, under other circumstances, we should insist on a much more liberal application of manure.

In cases of special exhaustion, Prof. Johnson contends that, knowing what has been carried off, it can be supplied by special manures. He says "the great object is to understand what a plant takes from the soil, and what to put in to bring it back again." This, it must be admitted on all hands, *is a great object*; but how to procure, on living terms, that which will bring it back again, is a *greater*. We doubt the mineral manure system, when it is stretched to embrace costly compounds; but still it is of great importance to know their peculiar virtues; it may lead to the discovery of some valuable substitute within our reach. We will, however, here close this article, as we shall recur to the subject, by giving below Prof. Johnson's analysis of the ash of the tobacco leaf, and composition of a special manure for tobacco, (though we believe guano to be a much better and cheaper fertilizer for that plant.) He says if an acre yield 800 lbs. of tobacco, 160 lbs. of mineral matter is carried off with it, which, in four years would be 640 lbs., while that of other products, allowing the straw of the grains to be returned to the earth, for

the same period, would be only 83 lbs. Hence, he concludes, tobacco exhausts the soil much sooner.

His analysis of the ash of the leaf is as follows:

Potash,	12.14
Soda,	0.07
Lime,	45.90
Magnesia,	13.09
Chloride of Sodium,	3.49
Chloride of Potassium,	3.98
Phosphate of Iron,	5.48
Phosphate of Lime,	1.49
Sulphate of Lime,	6.35
Silica,	8.01

100.00

All the ingredients necessary to replace these, he says, are present in the following mixture:

Bone dust, sulphuric acid,	23 lbs.
Carbonate of Potash (dry)	31 "
Do. Soda, (dry)	5 "
Do. Magnesia,	25 "
Do. Lime, (chalk)	60 "

144 lbs.

The proper rotations, &c., will hereafter be considered.

FARM WORK FOR APRIL.

The long drought and difficulty of ploughing last fall; the lateness of the period of putting in wheat; and the backwardness of the spring, have all conspired to throw much of the ordinary work for March into the present month; and we doubt not very many of the agriculturists of the State have yet to do a great deal of what they have generally heretofore done in March—such as—

PREPARATION OF SOIL AND MANURE.

The thorough preparation of the land, for pitching a crop, is "half the battle" unquestionably, and the other half, we might almost affirm, is liberal manuring. These are indispensably necessary to insure the trophies of success in agricultural labors. Neat and clean culture will fall in so naturally, and glide so smoothly after these preliminaries, that there will be no battle in that at all. If, therefore, we can exhort, coax or persuade our farmers to attend properly to these vital considerations, we may leave them for the present, as to subsequent operations.

Plough, then, deeply and closely, the land yet remaining to be broken.

Haul out the manure not already at its place in the field, as early as practicable, and pitch it in convenient piles, at such regular distances, so equally, and so cone like in shape, as to make the broad acres over which it is distributed resemble a

lively tented field—so that it may stand in convenient position to be applied with special reference to securing—first, *fertility*—secondly, *equality* of *fertility*; because it is beautiful to see your luxuriant fields smile with equal blades of "wavy corn," and decidedly comfortable to pull from every stalk a big, well filled ear.

This requires the vigilance, skill, resolution and personal superintendence of a *commander*. He is the greatest conqueror who subdues the soil and renders it tributary to his wants. Go out, then, spade in hand, as lord of your domain, and see, first, that the manure you have taken the pains to collect be well shovelled together in the act of removing it, and see that a hand be posted in proper place to sprinkle it over with something, during the process, to prevent the escape of ammonia, the strength of the manure. About a bushel of plaster, or two bushels of salt, or fifteen bushels of pulverized charcoal, or 20 bushels of ashes moistened with copperas water, to every 25 two horse loads of manure, well mixed with it, will answer the purpose, and will serve to make it last twenty per cent. longer when committed to the soil. It will amply repay the extra trouble and expense.

OATS.

Though late, some may not yet have finished seeding oats, though oats should be sowed, if possible, in February. They require strong land, or land aided by manure, to make them pay the cost of reaping. To put them in well, the ground should be broken up deep and fine, the seed then sowed, $1\frac{1}{2}$ of $1\frac{3}{4}$ bushels to the acre, harrowed in, and brushed over. The land should be water-furrowed and broadcasted with 10 or twelve bushels of ashes to the acre. It is said 2 bush. salt would help amazingly; but we do not expect the experiment to be very extensively tested by our farmers, this season at least.

CORN.

If possible, let the ground be deeply, thoroughly, and finely broken up, before planting. In ploughing, it would well pay the trouble, to follow in the furrow of the turning plough, with a sub-soiler, or coulter, breaking and loosening the earth at least 10 or 15 inches—care being taken that the soil be turned up in depth suited to its quality. All know that some lands will bear turning much deeper than others. This done, if the manure is too scarce to have been broadcasted, let it be carefully distributed in the hills or drills. If enough for only a handful to the hill can be provided, by all means let it be used; it will make a poor field worth cultivating. To be used so as not to fire, it should be put in and ridged upon. Then splitting the ridge to drill, or cross.

ing it to plant in hills, will mix it so as not to fire. A compost, well mixed, and lying in bulk only a day or two, made of guano, plaster or ashes, and rich woods or low ground mould, put up in the proportions of half a gallon of guano and a pint of plaster to five bushels of mould, and sprinkled in the hill around the grain of corn, *taking care to deposit it so as not to* come in immediate contact with it—two handfuls to each hill—will make a good ear of corn for every hill, in land that would otherwise produce nothing more than a nubbin.

Steeps for Corn.—A great deal has been said on this subject, and many have experimented on it with success, while others have realized little benefit, and some have even lost their seed. The opinion, however, seems to be pretty well established, that corn judiciously soaked, in proper mixtures, is quickened in growth and protected from vermin. The following has been used by some with much satisfaction:

Sal Ammoniac.—Dissolve 1 pound in 8 quarts of hot water, and when reduced to blood-heat, put one peck of seed corn in it. Let it remain twelve hours, roll in plaster, and plant it.—The sal ammoniac is not worth more than 25 cents a pound.

Salt-petre.—Some soak in salt-petre, and are much pleased with the result, as it protects the seed from the birds and gives the young plant a vigorous start.

Hen Manure.—Here is an article in the reach of every farmer, and it should be tried.

A Georgia paper says: "Corn soaked from twenty-four to forty-eight hours in a strong solution of hen manure, and rolled in gypsum, or good strong ashes, will, nine times out of ten, mature earlier, and give a greater yield, than corn planted 'just dry.'" Let it be tried; it will cost nothing, and may greatly increase the bulk of both blade and grain. It is surely a very desirable thing to give corn a rapid, vigorous and healthy start; since it cannot fail to hasten its maturity, lessening its liability to be injured by drought of summer, and making it yield more abundantly. But too much must not be expected from steeps; they are only helps to manures, and good culture. The idea that mere soaking could greatly increase the product without regard to richness of soil, or cultivation, is one of the humbugs that has long since been exploded. But, then, we should not discard altogether a positive good, because some have been silly enough to deceive themselves by it.

COTTON.

Break the ground very deep and fine: Cotton has a long tap root, that will dive a great way into the soil, if you will give it a chance. Let every field of only second rate land be manured at least in the drill. In cases where manure has not already been provided, heaps made of rich earth from the woods or any place where there are rich deposits, well mixed with a sprinkle of ashes and any kind of animal manure, and allowed to stand a week, and then liberally sprinkled in the drill, will richly pay for the time and trouble of hauling, &c. No time should be lost in planting, after the danger of cold and frost is passed.

TOBACCO.

Look well to your plant-beds. The fly and grass are, perhaps, the greatest evils now to contend with. A writer in the American Farmer recommends covering the plants with finely sifted manure, as the best protection against the fly. He says, "at the first appearance of the fly, you must cover them up with manure sieved as fine as you can get it, not in large quantities when the plants are small, but apply it frequently. The manure for the first two or three applications, ought to be well rotted, but the main thing is to get it fine either by flails or rubbing with the hands. You must be on the alert; any neglect here, your labor will have been in vain." He thinks but little of sulphur, train oil and other specifics, and believes there is no remedy but to push the plants, and at the same time keep them hid from the fly. He learns that Geese are good weeders, and recommends that if the season continues dry, the bushes be kept on the plants until they are nearly large enough to draw. Guano, half a gill to the hill, where not broadcasted, is an excellent manure for tobacco, and pays well.

CLOVER.

It is believed by some that Orchard grass ought always to be sowed with clover; it comes into bloom about the same time, improves the hay, the autumn pasture is more luxuriant and enduring, and is exempt from the hovenings of cattle. Sow to each acre 12 lbs clover and 2 bushels of the grass seed, the clover first, and the grass immediately after it.—To do it well, the grass seed should be spread on a floor, moistened and suffered to lie 12 hours, then be mixed with twice its bulk of sand or ashes. After ploughing, the ground should be harrowed well; after which sow the seed, harrow it over lightly, and roll or drag with a heavy lap, with numerous small limbs upon it. Clover must have manure, unless the land is rich, and should have been sowed in March, but will come if sowed early in April. In a

backward spring, it is impossible for a farmer to do every thing at the most suitable time. But rise early, be diligent, and make up, if possible, for all draw-backs.

THE GARDEN.

Don't neglect this. In the hurry of business too many omit to provide for a good variety of vegetables and small fruits for family use. Every one should take pains to have a neat, rich and well cultivated garden. The neglect of this necessary appendage to a farm, is inexcusable. Who can estimate the value and importance to health, happiness and cheap as well as good living, of an abundant supply of early and late vegetables—a good supply of asparagus, beets, cress, carrots, cabbage, kale, cucumbers, lettuce, melons, okra, peas, parsnips, potatoes, radishes, spinach, squashes, snaps, tomatoes, turnips, &c. &c.? It is not too late to attend to most of these vegetables. There are, also, many small fruits of value, that should be nursed well, such as straw-berries, goose-berries, rasp-berries, currants, and even black-berries. These fruits are delicious, wholesome, and come in good time.

Parsnips.—This is a native of Europe, a biennial plant, but grows well in this country, and is useful for stock as well as man. The two varieties, *Large Dutch*, or *Long Guernsey Cup*, and the *Sugar*, or *Hollow Crown*, are preferred, the former for stock, and the latter for the table. A deep, rich, sandy loam suits it best. The manure that suits it best is hen dung composted with decayed or decaying vegetable matter, guano, or well rotted cow or horse manure.

The time of sowing is from earliest spring to the end of April. Brigdeman recommends, and Prof. Mapes has successfully tried, the sowing of long radish seed with the parsnip seed, which should be sowed in drills a foot to a foot and a half apart, and covered not more than half an inch deep. The radishes are up so soon, that they serve to mark and shade the row, keeping it moist until the parsnip comes, and enables the gardener to run the hand cultivator or chop between the rows and keep the grass down in time, which is highly important in the early stages of the growth of this crop. Then the pulling up of the radishes is equal to one working of the parsnips. Keep them clear of weeds, thin out to six inches apart, and keep the ground loose and light. Those that are intended for winter use, may be dug immediately after the digging of sweet potatoes; but there is no danger in leaving them in the ground, as they are not injured, but improved in sweetness by the frost.—They are very nutritious, excellent for milch-cows,

and, if cooked, for hogs. Seed may be raised by putting out a few choice roots in spring, with the tops uncut, in a position sheltered from winds; then keep them clear of weeds and watered twice a week in dry weather. Never sow seed over one year old.

The Carrot.—This valuable root is raised in the same manner as the parsnip, and some prefer it. The long white is best for stock.

IRISH POTATOES.

Tan, it is said, will greatly increase the yield of potatoes. It has been tried by Mr. Sutton, of Massachusetts, with success. First, a shovel full of tan was put in the hill, then the potatoes on the tan, and covered with soil. The square, 14 paces each way, yielded $4\frac{3}{4}$ bushels. Second—a shovel full of barn manure from an ox stall, was put in each hill of the next square, same size, then covered with soil; and the yield was only 4 bushels. Third—dropped potatoes, and threw a shovel full of tan upon them, and then covered as above. Yield $4\frac{1}{2}$ bushels. The potatoes grown with the tan were of a superior quality. The whole ground was spread, after ploughing, with a light coat of barn manure, and harrowed in.

An excellent method of field planting is, to break the ground deep, then open deep furrows, with a plough, $2\frac{1}{2}$ feet asunder, then drop the potatoes 8 to 10 inches apart in the row, and fill the furrow up with well rotted manure, drawing a covering of earth of not more than half an inch thick over it.

ASPARAGUS.

Every garden should have a good asparagus bed. The varieties are, *Gravesend*, *Large White Reading*, *Large Buttersea*, *Large German or Giant*. Time to sow, in the Fall, or March and April.—Ground, best in the garden, well manured with rotted dung and ashes. Sow in drills, 12 inches asunder, and cover half an inch with light earth.—As soon as up, hoe carefully and keep them well cultivated. Transplant, when about a year old, early in February. The ground for the bed must be a light, dry, sandy loam, and exposed to the sun all the day. It should first have a coat of well rotted dung 3 or 4 inches thick well mixed with the earth; and then be regularly trenched 18 inches deep, then cover the bottom of the trench with well rotted manure 6 inches deep; after which fill the trench with a mixture of well rotted manure and rich light garden loam, in equal quantities, thoroughly mixed together, raising it a little rounding 6 inches above the common level, and rake it over. Then lay off the rows with a line, a foot apart, dig a narrow

trench by it 6 or 7 inches deep; set in the roots, up-right, a foot apart in the trench, drawing the earth to them to keep them in place, and then cover so that the crown of the plant will be at least 3 inches below the surface. Complete the drilling and planting of one row at a time. The planting finished, rake the bed all over in the neatest manner. Some sow the seed in *this* way, and never transplant. If this be done, sow two seeds in a place, cover half an inch, and when well up, pull out the weaker plant. In either case, keep the bed clear of weeds and grass and the surface lightly stirred between the rows, through the whole growing season. *Winter dressing.*—As soon as the stalks turn yellow and cease growing, they should be cut down close to the earth, removed, all weeds and grass pulled out, and the beds dressed with good strong manure, laid on three inches thick, and carefully forked in down to the crowns of the plants. Then cover the beds several inches with long coarse manure from the stables. The seedling asparagus should also have a slight dressing. *Spring dressing.*—This should be done early, just before the buds begin to rise. Perhaps, some favorable time in January will not be too early. First burn off the litter, next rake off all the residue of trash that may encumber the ground, then spread a liberal coating of short dung over the surface, and dig it in with the fork, taking great care not to wound the crowns of the plant with the tines of the fork. After which keep the beds clear of the weeds: frequent raking, carefully done, will keep the beds in fine condition. With either spring or winter dressing, salt and ashes, in equal quantities, should be sprinkled over the beds until they are entirely covered with the mixture, as asparagus is greatly improved, and weeds and grass destroyed, by salt. A friend who has both scientific and practical knowledge, prompts us to beg the ladies not to encumber their beds with radishes, turnips, lettuce, nor any other vegetables, as the practice will certainly ruin the asparagus. Cut for use, when the plants are thrown up a little above the ground, by slipping the knife down perpendicularly close to each root, and cut it off slantingly, three or four inches below the surface. To cook: after being washed, let it be tied in bundles of about a dozen buds each, and boiled in water, seasoned with salt, until tender, which will be in about twenty minutes: take it up immediately, and season it with melted butter, while smoking hot, (and keep it so) by itself or with toasted bread.

To destroy Insects.—To destroy insects, which

attack various kinds of plants, the American Farmer, whose Editor is an able and skilful practical man, recommends the following: Put one gallon of soot and four oz. of flour of sulphur in a bag, place the bag in a tight barrel, and pour thereon five gallons of boiling water, let it stand until the water cools, then fill up the barrel with water. With this decoction give your plants *three* or *four* waterings in the forenoon of as many successive days, and you will effect two desirable objects—the vermin on your plants will be destroyed, and the plants themselves restored to health, and will, very soon, begin to grow vigorously. The barrel may be filled up with water three or four times. Our friend K., of this vicinity, informs us, that he succeeds, to his satisfaction, in destroying the *winged* insects by building a fire, and keeping up a light, on the border of the square containing his young plants, for several nights in succession; by which they are attracted from the surrounding ground, as far as the light extends. He has found it effectual in protecting turnips, as well as other plants.

STATE AGRICULTURAL SOCIETY.

Our press (of other days) was the first in the State to urge the establishment of this institution, and we doubt not contributed in a good degree towards preparing the public mind for the important movement. We understand its objects and beneficial influence sufficiently to know, that its membership should not be confined to those only who are engaged in agricultural pursuits. It is intended to advance every branch of industry, and benefits every class of our citizens. All, therefore—farmers, mechanics, merchants, lawyers and doctors—should come forward and unite themselves to the Society and give it *material* aid in fulfilling its objects, by which the interests of all are promoted. It proposes, especially, to foster and encourage directly the manufacturing and mechanical pursuits of our own people, which they do not seem properly to apprehend or appreciate. If they understood it correctly, surely they would vie with the farmers and planters of the State in efforts to support and encourage that noble institution. Their interest is as much promoted by it, and it is as much their duty to enrol themselves as members, and to take a zealous and active part in its operations, as those whose business is purely agricultural. We hope to see all coming up cheerfully to its help. Come, gentlemen of all classes, it is mean and niggardly to stand off and let others pay and labor for your benefit. Come at once up to the “scratch.”

[The subjoined article from a highly reliable source, possesses matter of deep interest to every agriculturist, and should be carefully read by all engaged in that pursuit. It shows there is danger in relying implicitly in the virtue of *mineral* manures, and teaches due and timely caution to those who wish to arrive at a sober, rational and profitable knowledge of the *true, safe, and practical* principles of their art. Experiments may, indeed, properly be made, but they should be conducted on such a scale, and in such a manner, as to give a *fair trial*, and at the same time incur no absurd risk of serious loss and disaster.]—ED. ARATOR.

THE MINERAL MANURE THEORY.

ANALYTICAL LABORATORY, YALE COLLEGE,
New Haven, Connecticut October 24, 1851.

ALBANY CULTIVATOR.—The subject which I have placed at the head of this letter is not one which can be fully discussed in a single page of your journal; and yet it is one of so much importance, that I desire to make a few explanations and statements regarding the shape which it has now assumed among scientific men. When I mention the "mineral manure theory," I speak of that view of manures which ascribes all of their efficacy to their mineral constituents. The principal supporter, and, indeed, the originator, of the theory, is Professor Liebig. This distinguished chemist, distinguished no less by his clear and lucid style than by his high scientific reputation, was for a time devoted to the "ammonia theory," excluding those mineral manures to which he now attaches so much importance. A few years since, however, he saw cause to change his ground, and has since held that, if we furnish mineral manures in abundance, plants will, without doubt, always obtain their ammonia, or rather nitrogen, from the atmosphere of the soil.

In pursuance of this idea, he went so far as to compound, after a careful study of ash analyses, specific mineral manures for wheat, rye, oats, turnips, &c., which were to take effect upon all soils in a proper physical condition. The failure of these specific manures, which were patented in England, was, as many of your readers doubtless are aware, very decisive.—I had supposed the subject rather at rest, but find that, in the last edition of Professor Liebig's "Letters on Chemistry," published so late as the commencement of the present year, he reiterates his former views on this subject in a most decisive manner, and prophesies that our future agriculture will depend upon them, however much we may distrust and disbelieve them now. I have also had occasion to observe quite recently that some gentlemen of high standing among our scientific men follow Liebig in this as well as in other theories. For these reasons I have thought it best to express my own opinions on this contested point, in order that our farmers may be aware that all chemists do not hold to views which militate almost directly against the ordinary results of practice.

My belief was that, when Professor Liebig advocated the 'ammonia theory,' he was nearer right than he is now, when he only admits the necessity of mineral manure; not that he was right then, but that better results would, in most cases, be obtained by the farmer in the use of *ammoniacal or nitrogenous manures alone*, than by mineral manures alone. We find land in all parts of the country where strictly mineral applications, such as lime, plaster, marl, &c., fail to produce any marked effect; but if upon any of our fields we apply guano, or sulphate, or carbonate of

ammonia, the character of the vegetation is at once changed, its color alters, its luxuriance and vigor increase, and in a great majority of cases the product is augmented. Every farmer who has observed matters intelligently knows that the above statements are correct; indeed, they have been so far applied in practice, that the quantity of ammonia which any manure contains is taken as the highest standard of its value. A guano, for instance, with the usual per centage of ammonia, will bring twice as much as one which contains little ammonia, even though this deficiency is replaced by the most valuable possible mineral constituents. I must not be understood to say that mineral manures are not valuable; on the contrary, I have the highest opinion of them, and recommend their application in almost all cases where my advice is asked. The mineral constituents of the plant are no less indispensable than its organic part, and if one or two of them are absent from the soil, the plant will not flourish. There are many instances of these special deficiencies, which special mineral manures alone will supply, and there are certain mineral substances which have been found specially valuable. The most valuable of all these is phosphoric acid. Now, the *phosphates*—that is, the compounds of this acid—are not more necessary to the plant than are the *alkalies*, but the supply is far more apt to be scanty; and this—not its intrinsic importance to the plant—is the cause of its higher value to the farmer. The same principle applies when we say that nitrogenous manures, of which ammonia is the most common form, are more valuable than others known in agriculture. *They are volatile, easily decomposable, and very soluble. For all these reasons they are apt to disappear most rapidly.* These manures, then, are worth more to the farmer than any others, because they are most likely to be needed, and because their scarcity renders it somewhat difficult to obtain a good supply.

I make these statements fearlessly and confidently although against so high an authority as Liebig. I should not presume to differ from him on mere theoretical grounds, but feel that I am here sustained by almost uniform practical results. It must be acknowledged that we have occasional instances of plants grown upon soils nearly or quite destitute of vegetable matter; but in most of these that have fallen under my observation, the fact of the *entire absence* of vegetable, and particularly of nitrogenous matter, has not been sufficiently established. The information that they give is neither entirely definite, nor well enough made out, by continuous and careful experiments, to be set off against an array of facts brought forward in favor of the opposite view. Single experiments, for a single year, must always be looked upon with distrust until amply verified; & it is mainly by trusting to such, so far as we are informed, that the exclusive mineral theory has been built up. The laboratory alone is sure to go wrong when it attempts to prescribe rules for practice. The chemist must go into the field and study actual experience if he would serve the farmer effectually. It has been my intention to experiment somewhat largely upon this particular subject; but in the last number of the Journal of the Royal Agricultural Society of England is a paper of Messrs. Lawes and Gilbert, that almost precludes the necessity of doing anything more. These gentlemen have been experimenting on a large scale for the last ten years, and their results are clearly and admirably set forth. They took a field at the close of a four years' rotation, when the manures added at the commencement of the course were exhausted. On

this ground they have cultivated wheat for ten years under various conditions. One plot remained unmanured, and the produce of this served as a standard and a starting point for comparison during the whole period. Thus, if its yield in 1845 was seventeen bushels per acre, the improvement over this in an adjoining plot, otherwise the same, was set down to the advantage of whatever manure had been employed. Such a system of cropping, continued for so long a time, obviously affords results that are worthy of much confidence. The first years' comparative practice was made with various approved mineral manures alone. It was found that, even by the addition of large quantities, the increase of product over the unmanured plot was but trifling. In the next year the same character of mineral manures were employed, but with the addition in several cases of ammoniacal or nitrogenous substances. In all of these the effect was quite marked, the yield increasing to ten, twelve, and fourteen bushels, above the unmanured plot. This, in short, was the character of all the results; sometimes ammoniacal manures alone were added, and then the increase was several times more than by mineral manures alone. One experiment was very striking: four hundred weight per acre of Liebig's special mineral manure, for wheat, was applied to a plot, and produced an increase of but about two or three bushels upon this same plot in the next year. A purely ammoniacal manure gave an increase of ten or twelve bushels. To make the experiment still more conclusive, no manure was added to this plot for the next crop, and the yield then fell almost to the original standard.

These trials seem to me perfectly conclusive, in this matter, so far as wheat is concerned; they prove that ammoniacal manures increase its growth far more than mineral manures, where both are already present in moderate supply, and that the addition of any amount of the latter will do little good unless the former be also present. These views are still further sustained by a very able paper in one of the late French scientific journals. The experiments in this case were made upon oats, and were between forty and fifty in number. They commenced by growing them out in sand, first deprived of every thing soluble by acid, and then burned to draw off all vegetable matter. In this, as might have been expected, no perfect plants were produced. One mineral substance after another was added until at last it was found that, with a certain series of them, the plant flourished better than with any others. It, however, was still far from luxuriant, or from yielding a fair amount of grain. It was not until some manures containing nitrogen had also been added that entirely healthy, fertile, and strong plants were obtained.—These experiments appear to have been very carefully conducted, and furnish important confirmation to those of Messrs. Lawes and Gilbert.

There are other questions involved in these experiments, which for want of space cannot be discussed here. The main point is, I think, fully established.—The farmer may supply special deficiencies by special mineral manures, and should aim to keep up the supply of mineral substances in the soil; but he cannot render it fertile, and continue it so, with them alone; he must also supply nitrogen in some form, and will find it in a great majority of cases the most important and efficacious of all fertilizers. In despite of *theoretical* views to the contrary, he will find that, in *practice*, he can best afford to give a high price for those manures—that, especially, rich in ammonia or some other compound of nitrogen. JOHN P. NORTON.

COCHINEAL.

The most beautiful of all red colors is that produced by cochineal—the *coccus cacti* of Mexico.—These insects feed on the cactus plant, and are cultivated by the natives of Honduras—where the finest grow—simply as a dye drug. They are swept off with feathers into pans of hot water, and afterwards dried for market. The wool for red being well scoured and washed is introduced into a bath of ground cochineal, and its mordant, and finished at one operation. The wool must be white, the dye kettle must be very clean, and either of copper or tin. To dye five pounds of wool, let seven and a half ounce ($1\frac{1}{2}$ to the pound) of ground cochineal be introduced into the kettle, and boiled for five minutes; then introduce ten ounces of cream of tartar and a large wine-glass full of the nitro-muriate of tin; stir all up, and introduce the wool, hanging it neatly and rapidly. Allow it to boil for three quarters of an hour, and a good full color may be expected. This is the most beautiful red dye in the world, and the most easy and simple to dye. It is dearer, however, than the *Lac*. This is the product of one insect, a native of the East Indies.—There are different kinds of it; that used for dyeing is prepared for this purpose. About four ounces of lac (some kinds require six) are employed to dye one pound of wool. It is prepared for dyeing by steeping it (the lac) for twenty-four hours in hydrochloric acid, stirring it from time to time, & then dyeing in a bath the same as cochineal. It is a cheaper and more common but much inferior color to cochineal. All goods that are dyed with spirits of any kind, acids, must be well washed before they are dried.

To make Mutton Suet Candles in Imitation of Wax.—1. Throw quick lime in melted mutton suet; the lime will fall to the bottom, and carry along with it all the dirt of the suet, so as to leave it as pure and as fine as the wax itself. 2. Now, if to one of the suet you mix three of white wax, you will have a very fine and to appearance a real wax candle; at least the mixture could never be discovered, not even in the moulding way of ornaments.

The Greenfield Gazette tells a turkey story which is rather tough, but nevertheless may be true. It says that a turkey belonging to Alonzo Paine of Montague, was blown from a tree, December 3d, during a snow storm, and buried in a drift, in which it remained thirty-three days, (can't you take off a little?) until the thaw of Jan. 4th, when it came out, and after eating a hearty meal, took its place as usual on a tree about twenty-five feet from the ground.

The largest mill in the world is at Lawrence. Its floors cover a surface sixteen acres. There are in operation 40,000 cotton spindles and 10,000 worsted spindles. These are to be increased to 80,000 and 20,000 respectively. There are 1,200 looms in operation, which are to be increased to 2,400. Three thousand hands are required to keep all these at work which produce 500,000 pieces of cloth per annum.—It consumes 20,000 pounds of cotton each week, or 1,500,000 pounds a year. The cashier pays the sum of \$50,000 for wages each month.

From the American Farmer.

IMPORTED JERSEY, OR ALDERNEY STOCK.

We have been favored by Dr. Morton, of Mass., with a drawing, on another page, of a group of his imported Jersey or Alderney stock. This stock was selected by the same gentleman who purchased for J. H. McHenry, Esq. those exhibited and so much admired at our last cattle show, and arrived in the same ship with them. Dr. Morton exhibited his stock at the late show of Norfolk Co., Mass., & was awarded a prize therefor, as follows:—to Dr. Morton, of Needham, a gratuity of \$5 on two heifers and three calves, they being the best specimens of Alderney stock present, but not coming under the Society's rules, could not compete for premiums. [Not being long enough in the country.]

From the report of the Committee on the Dairy, of the same Society, we make the following extract:

"The Committee take pleasure in noticing a very extraordinary produce of butter, in a 40 pound lot, from three Alderney heifers recently imported from Jersey, England, offered by Dr. Morton, of West Needham, and they recommend that he receive a diploma from the society. The ages of the heifers, as Dr. Morton states, are—one 20 months, one 2 years, and one 3 years. They were received direct from England ten days ago, and the 40 lbs. of butter were made from them within the last nine days."

We had a visit recently from Dr. Morton, who informed us that he would dispose of a portion of his stock, at the prices annexed, deliverable on the cars at Boston, viz:

A 4 year old imported Heifer in calf, for \$360—a 2 and 3 year old do. do. in calf, \$250 each—and a 1 year old in April, \$125. These prices are less than they can be imported for now.

The following description of this breed of cattle is by Col. LeCoutur, of Belle Vue, in the Island of Jersey:

The breed of cattle familiarly known throughout Great Britain as the Alderney, and correctly termed in the article Cattle, of the Lib. of Us'l Knowledge 'the crumpled horn,' was originally Norman, it is conceived, as cows very similar to them in form and color are to be seen in various parts of Normandy and Brittany also; but the difference in their milking and creaming qualities is really astonishing, the Jersey cow producing nearly double the quantity of butter.

The race is misnamed "Alderney," as far as Jersey is in question: for about seventy years since Mr. Dumaresq, of St. Peter's afterwards the chief magistrate, sent some of the best Jersey cows to his father-in-law, the then proprietor of Alderney; so that the Jersey was already at that period an improved, and superior to the Alderney race. It has since been vastly amended in form, and generally so in various qualities, though the best of those recorded at that period give as much milk and butter as they do now.

Ten years have elapsed since the attempt was first made by fixed rules to improve the form and quality of the Jersey cow. A few gentlemen, presided over by the then Lieutenant-Governor, Major General Thornton, selected two beautiful cows, with the best qualities as models. One of these was held to be perfect in her barrel and fore quarters; the other equally so in her hind quarters. From these two, 28 points were laid down to be the rule for governing the judges in all cattle shows of the Jersey Agricultural Society.

[20 points for the bull, and 21 for heifers were necessary to secure a prize.]

The accuracy of this arrangement is proved by the fact that no deviation from it has been made, the experience of ten years, having only added to the scale of the points for general appearance and condition.

The evil was, and still exists, that most Jersey farmers, like many others, never thought of crossing with a view to improvement, conscious of possessing a breed excellent for the production of rich milk and cream—milk so rich in cows that it seems like what is sometimes called cream in cities—and cream so much richer than that, from a verdant pasture in spring, it appears like clouted cream: but the Jersey farmer sought no further. He was content to possess an ugly, ill-formed animal with flat sides, wide between the ribs and hips, cat-hampered, narrow and high hips, with a hollow back.

She had always possessed the head of a fawn, a soft eye, her elegant crumpled horn, small ears, yellow within, a clean neck and throat, fine bones, a fine tail; above all, well-formed, capacious udder, with large swelling milk-veins.

Content with these qualities, the only question is the selection of a bull, among the most judicious farmers was, "is the breed a good one?" meaning, solely, had its progenitors been renowned for their milking and creaming qualities? But the mere attention to this was of primary importance in a circumscribed spot like Jersey; it may have been quite sufficient to establish an hereditary superiority in the most useful quality.

It may also have established it with a rapidity that could not have been obtained in a wide extended country, like France. Hence, perhaps, the present superiority of the Jersey over the French breed.

The Jersey cow is a singularly docile and gentle animal; the male, on the contrary, is apt to become fierce after two years of age. In those bred on the heights of St. Ouen, St. Brelade, and St. Mary, there is a hardness and sound constitution that enables them to meet even a Scotch winter without injury; those bred on the low grounds and rich pastures are of larger carcass, but, are more delicate in constitution.

Of the ancient race, it was stated, perhaps with truth, that it had no tendency to fatten; indeed some cows of the old breed were so ungainly, highhorned, and ragged in form, Meg Merilies of cows that no attempt to fatten them might succeed—the great quantities of milk and cream which they produced probably absorbing all their fattening properties.

Yet careful attention to crossing has remedied this defect. By having studied the habits of a good cow with a little more tendency to fatten than others, and crossing her with a fleshy, well conditioned bull of a race that was also known to produce quality and quantity of butter—the next generation has proved of a rounder form, with a tendency to make fat, without having lost the butteraceous nature.

Some of these improved animals have fattened so rapidly while being stall fed, from the month of December to March, as to suffer in parturition, when both cow and calf have been lost; to prevent which it is indispensable to lower the condition of the cow, or to bleed in good time. Such animals will fatten rapidly. The only defect being in the color of the fat, which is sometimes too yellow. It is now a fair question, whether the improved breed may not fatten as rapidly as any breed known?

[See page 13.]



JERSEY CATTLE, IMPORTED BY DR. W. T. G. MORTON, ETHERTON FARM, WEST NEEDHAM, NORFOLK COUNTY, MASS., AUG. 1, 1851.

Quayle, who wrote the "Agricultural Survey of Jersey," states "that the Ayrshire was a cross between the short-horned breed and the Alderney."

There is a considerable affinity between those two breeds. The writer has noticed Ayrshire cows that seemed to be of Jersey origin, but none of them were said to have produced so large a quantity of cream or butter; nor was the buttar in Scotland of nearly so deep a tinge of yellow as the most rich in Jersey. One Jersey cow that produces very yellow cream will give good color to butter produced from two cows affording pale-colored cream.*

It is not doubted that crosses from the Jersey breed have taken place. Field-Marshal Conway, the governor of this "sequestered isle," as Horace Walpole termed it, and Lieutenant-General Andrew Gordon, who succeeded him nearly half a century back, both sent some of the best cattle to England and Scotland. If pains were taken, the race and its consequences might be distinctly traced, which might lead to important results in breeding.

In the "Farmers' Series," at the Article "The Angus Breed," a portrait of a beautiful heifer is seen; she is said to have been "out of a very small cow; with a remote dash of Guernsey blood in her." Her dead weight was estimated at 130 or 140 stones.—She sold for 50*l.*, after having obtained several medals, and had been publicly exhibited.

The grand desideratum is to discover a breed that will be useful to the grazier, the dairyman, and the small farmer. In so small a spot as Jersey, it is difficult to cross the breed essentially—a great step towards it is gained by crossing the cattle bred in the low rich pastures with those of the exposed hills on the western or northern coast; these being smaller, finer boned, of a more hardy constitution, and feeding on a short rich bite, impart strength of constitution and hardihood to the larger and more delicate animals of the sheltered low grounds.

It is believed that cattle are more healthy and free from epidemics here than in most countries. This may be attributable in some measure to the saline particles which, being so frequently in suspension over the island, are afterwards deposited on the herebage, which tend to its salubrity. After heavy gales, it is frequently found that the grass all across the island has a strong, saline flavor. So partial are the cattle to this flavor, that they will greedily de-thegrass which has been watered with sea-water which they previously rejected. Two pipes per acre, spread from an ordinary watering cart, or from a pipe which may be made to pour into a long deal-box perforated with holes, will be found of great utility, where sea-water can be obtained at small cost.

The Jersey farmer treats his cow with gentleness and care; it might be more correct to say that his wife does so. On good farms she is usually housed at night after the end of October to the end of February, if heavy rain, hail, or snow prevail. It is deemed healthful to give a cow a short run daily through the winter, excepting in stormy weather. At this season, which is several degrees warmer than in the mildest part of Devonshire, she is fed with a certain portion of straw, from 10 lbs. to 20 lbs. of hay, with about 10 lbs. to 20 lbs. of parsnips, white carrots, turnips or mangel-wurtzel.

The small portion of grass which she may pick up in the winter, with the above quantity of food, enables her to produce a rich and well colored sample of butter till within six weeks of parturition.

At this period which is usually regulated to take

place about the first of March or April, just when the cow being in full milk may soon be placed on the fresh spring pasture in April or May, she is an object of extreme care. On calving, she is given a warm potation of cider, with a little powdered ginger.—Quayle hints that pet cows are further indulged with a toast in their caudle.

The calf is taken from the cow at once and fed by the hand. It may be well to advise that, on the first occasion of calving, the calf should be allowed to draw the cow fully; for no milking by hand will so completely empty the udder, nor cause the milk veins to swell to their full developments as will the suction of the calf.

Some of the early meadows produce rich grass in March; but the general flush of grass, which comes on generally late in April, is the period to which the Jersey farmer looks forward with anxiety. The cow is then tethered to the ground by means of a halter 5 or 6 feet long; this is appended by a ring and swivel to a chain which encircles her horns, closed by a ring and bar; the other end of the bar is fastened to a chain 6 or 8 feet long, which is connected by a swivel and ring to a stout iron stake a foot long; this is driven into the ground by means of a wooden mallet. The cow having this circular range of 12 feet or more is compelled to eat it clean. She is usually moved thrice a day, and milked morning and evening, on many farms at midday also. Under this system, the writer has owned four cows that produced eight-and-forty lbs. Jersey, or above 51 lbs. imperial, weight of rich yellow butter per week, in the month of May and part of June.

In very hot weather in July or August, it is advisable to shelter the cow from the heat and flies; otherwise these tease cows to such a degree, by forcing them to run about incessantly, that they have no time for repose or chew the cud; they, in consequence, afford much less milk or cream.

It was anciently thought that cream from the Jersey cow was too rich for making cheese. Mr. Le Feuvre of La Hogue, who has a fine breed of cows, tried the experiment two years since, and succeeded to admiration. It was made from the pure milk, cream and all, as it comes from the cow. It was found that the quantity of milk that would have produced a pound of butter, produced 1½ lb. of cheese.

From the quantity of milk which produced a cheese of 20 lbs. weight, the drainings of the curds and whey, on being churned, yielded 4 lbs. of butter. The butter was of an inferior quality when eaten with bread, but was superior to any other for the making of pastry; it was peculiarly hard, and of excellent texture for such use in hot weather. The writer has tasted cheese from Mr. Le Feuvre's farm, quite equal in quality to the richest double Gloucester.

On one or two farms besides Gen'l Fouzel's, butter is made from clouted cream in the Devonshire mode; but as this is not peculiar to Jersey, it is not noticed further than that 10 lbs. of butter are usually made in five minutes by this process. The usual way of procreting the cream is by placing the milk in pans about 6 inches deep—the glazed shallow earthenware, having taken the place of the unglazed deep vessels.

It is admitted that the richest milk and cream are produced by cows whose ears have a yellow or orange color within. Some of the best cows give 26 quarts of milk in 24 hours, and 14 lbs. of butter from such milk in one week. Such are rare.—

Good cows afford 20 quarts of milk daily, and 10 lbs. of butter weekly, in the spring and summer months. Butter is made every second and third day.

Lactometers indicate the degrees of richness, or cream, which the milk of any cow affords, with great nicety.—This varies with different food. The mode is to fill the lactometer up to zero with the first milk that is drawn from the cow in the morning; then, when the udder is nearly emptied, to fill a second lactometer with the residue of the milk, throwing a little out of the lactometer, to refill it to zero with the very last drops which can be drawn from the cow: these will be nearly all cream.—The lactometer filled with the first milking may only indicate 4 degrees of cream, while that filled with the last milking may indicate 40 degrees of cream. Then by dividing the sum total, 44, by 2, we have 22 degrees of cream, which a very good cow will produce; others so little as 10 or 15.

Jersey butter, made when the cows are partially fed on pursnips, or white carrots and grass, in September and October, when salted and potted will keep till the following spring, preserving as well as Irish with a much less rank flavor.

The present price of the best Jersey cows, including points and quality is 20 to 301.; and up to 201. is given for the best heifer. Yearling bulls, of the best breed and points, from 10! to 15!.

*The senior editor of this journal had many years since, on a farm near Baltimore, a single Alderney in a herd of three cows, and well remembers, that an honest Irish dairy-woman begged that that cow might not be sold, as her milk served to color the butter of all the rest.—[J. S. Skinner.

FOR THE NORTH-CAROLINA ARATOR.

Mr. Lemay: I was much pleased when I heard that you proposed to publish a paper for the benefit of the FARMER and the MECHANIC; for these two pursuits are alike dependent, the one upon the other; and the whole State is alike interested in them both. I have frequently been asked the question, by strangers visiting this place, "What kind of mechanics have you in North Carolina?" Now to answer this question honestly and fairly, would be to present a very gloomy picture; and to prevent which, I have answered, 'only tolerable.' This question and answer are very important subjects at this time in view of the rapidly increasing prosperity at the State, and should be inquired into by every man who has the least interest in this growing prosperity. I know of but few Mechanics in the State, "of all branches," who would rank as superior in the different trades they represent, and these few are so widely scattered, that they are scarcely known to exist amongst us." This scarcity of good Mechanics can, I think, be very easily explained. It is for the want of proper encouragement; and for the great love our people have had for all articles manufactured at the north; for it is only necessary—"to secure the sale of a plow or wagon, or an agricultural tool of whatever kind" to make Boston or New Haven, Troy, or some other town upon it. This is altogether a mistaken notion, and is ruinous, in its tendencies to the prospects of all good mechanics. It is not yet four years since the first attempt was made to manufacture Steam Engines and Saw Mills, and other heavy castings, in this State, as a regular business; And what were the prospects at that time? The es-

tablishment was opened with a small capital on a small scale, and in the very face of these prejudices. Nobody believed that a Steam Engine of 40 Horse power could be built in Raleigh, nor did they believe that Railroad Car Wheels could be cast here," but this establishment proceeded slowly and surely until it had accomplished both these things, & has since been successful in manufacturing a large number of steam Engines, Saw Mills, Railroad Cars, and Iron & Brass Castings of every variety, and of a superior quality; and it is to be hoped that it will continue to receive such encouragement as it deserves, until it shall become an establishment worthy of a southern town. There is no difficulty in the way of procuring, and retaining, the services of good Mechanics, from abroad, to place at the head of any business, if the proper respect is shown them by our people; and it is the only way we can hope to make a fair showing with other States in the Mechanic arts. More attention must be given to the education of boys; for it must not be presumed that a mechanic does not want an education, for it is just as important to a mechanic as it is to a lawyer or a doctor, if he expects ever to reach the head rank in his profession. I don't mean that he should necessarily understand Latin and Greek and French &c., but he should at least understand reading, writing and arithmetic sufficient to enable him to weigh "by measurement" a piece of Iron or Stone, and measure a stick of timber without first having to saw it into inch boards. Boys should be educated with a view to some mechanical trade. Mechanical establishments of all kinds should be encouraged by capitalists with their money; both by investing in them and purchasing from them every thing, from a Steam Engine to a negro's "Stitch-down." Their sons should be placed in them as apprentices, with such encouragement as would induce them to serve out their time with honor to themselves and credit to the State. In this way, in a few years, North Carolina would be able to rely upon her own Mechanics in every branch; Our Railroads could be equipped with Locomotives and Cars, our rivers with Steam Boats, and our Mines and Plantations, with their machinery and tools of every description, the works of North Carolina Mechanics; Millions of money would be kept in the State, our towns would be built up and filled with an honest and intelligent people, and happiness and prosperity would be seen and felt throughout the whole length and breadth of North Carolina. I wish you every success in your new undertaking, and hope your efforts may be successful in waking up a mechanical interest in the Old North State.

B——.

For the Arator.

TARBORO', Edgecombe Co. Feb. 20, '55.

MR. T. J. LEMAY, Dear Sir:—During the past year I gave an account (through the columns of the Farmer's Journal, of the preparations for a crop on Panola, and promised the readers of that paper to furnish for the January number of the Journal the results. The discontinuance of the Journal forms my apology for asking a place in your forthcoming Arator, to redeem my promise.

The crop under culture, as I stated in the July number of the Journal, consists of 225 acres in corn, 220 in cotton, 40 in oats, and 8 in sweet potatoes.—The season, particularly for cotton, proved a most favorable one, and the result far surpassed my most sanguine expectations.

It was as follows: 900 barrels of corn, 219½ bales (400 hundred pounds to the bale) of cotton,* 27 stacks of oats, making at least one thousand pounds of hay oats to the stack and over one thousand bushels of clean oats, and 2,000 bushels of sweet potatoes.

When it is known that the crop of '54 was the *third* crop under its present management, and the condition of the land when we took charge, considered, we claim it as the best crop made in Edgecombe during the past year.

Very respectfully,

Your obt. ser't.

JNO. S. DANCY.

* The aggregate number of pounds of seed cotton was 274,000, or 1245 per acre.

From the Farmer's Journal.

TARBORO' Edgecombe county, }
Thursday, June 1, 1854. }

Dr. JNO. F. TOMPKINS, Dear, Sir: Absence from the State for some weeks, prevented me from doing at an earlier date, what I now propose, i. e., give you an account of our preparations for the crop of '54.

In the first place, our laboring force on Panola consists of thirty-four hands, of various sizes, ages and qualifications, twenty head of mules, and three yoke of oxen. During the year '53, we had two wagons constantly employed in hauling up materials for manure making, beside taking advantage of every day (when the condition of the growing crop would justify it), to make compost with our entire force. The interval between laying by the crop and the beginning of the fodder pulling and cotton picking season, (usually from two to three weeks), was busily devoted to the making of compost and filling up our cattle and hog lots. After housing our crops of corn, cotton and peas, which we last fall completed by the 10th of December, we again set to work, composting cotton seed, and ditch bank, stable manure and low ground soil, and hauling again into the cattle and hog lots.— This was kept up (with an occasional hindrance in packing cotton,) by nearly all hands and team till we commenced ploughing about the middle of January, with six double teams, using the Maryland or Patuxent plow, procured from Sinclair and Co., Baltimore.

After the plowing season began, the remainder of our hands and team continued to make manure in the different ways I have mentioned, till the 28th day of February, when we commenced the troublesome and laborious job of hauling out what we had collected during the twelve months past.

We finished the work of hauling out on the 25th of April, being near two months engaged at it, and according to our plan of manuring, one load for every twenty feet square, or 110 loads to the acre, we hauled out compost enough to put on 350 acres of land or over 35,000 loads (one horse cart loads, five bushels to the load.)

Besides this we applied twelve tons of Peruvian guano to cotton, corn, and oats. Some of the compost previously mentioned, had two hundred pounds guano mixed in each acre-heap. So that, altogether, we have manured over 400 acres of land for the crop of '54, at the rate of 110 loads to the acre.

Our crop consists of 220 acres in cotton, all manured, 225 in corn, 150 of it manured, 30 in oats and eight in sweet potatoes manured. The cotton crop to date

looks promising; (the weather at this time is, however, unfavorable for the cotton plant, and a few days of it will alter the appearance of things.) The corn crop is backward and indifferent, and presents an irregular appearance, owing to the cold snaps the latter part of April, when much of it had to be plowed up and replanted.

Having detailed to you clearly, I hope, our preparations, I will now tell you our calculations, and when the crops are gathered, I will give you and your readers the results, so that you may see how far I miss the mark. You must bear in mind that this is our *third* crop, on Panola, and the process of making poor land, fertile, is the work of years, long years.

The land we have now in cultivation, when we took charge of the farm in January, '52, would have made in my opinion without manure not exceeding 400 pounds of seed cotton or two barrels of corn per acre.

Our calculation this year is to make 900 or 1000 pounds to the acre in cotton and four barrels of corn, if an average season prevails.

I will try and recollect to prepare for your January number the results of our operations for '54.

Very respectfully,

Your obedient servant,

JOHN. S. DANCY.

AGRICULTURE.—A correspondent of the Richmond Enquirer, writing from Liverpool, gives American farmers some advice, predicated on the continuance of the war with Russia. He says the spirit of the English nation is unanimous for its prosecution, and that men and money will be voted for its continuance.— The rumored alliance of Austria had not at the date of this letter transpired. There are those, however, who think that the effect of the Austrian union with England and France will be to drive Austria over to the Russian interests, and that thereby the war will be more probably continued and made European, than stayed. We subjoin what the Enquirer's correspondent says to American farmers:—

"Yet when England is drained of her men, when so many thousands now engaged in peaceful pursuits are taken away, and the labor of the country thus manifestly lessened, who, I pray, are to furnish meat and bread for these vast armies, and the population that yet remains at home? There is not a mouth less to feed, and many less left to produce the necessaries for all at home or abroad. Russia will send nothing from the Baltic, and the great wheat growing country on the Danube, and that which is watered by the many rivers entering the Black Sea, is ravaged by desolating war; and that the people of that vast and rich county has for years sent abroad, and to England especially, will find for its diminished production consumers at home. Already are these considerations pressing on the English wheat and flour market, and keep up the prices even after a good crop, which has been secured in most admirable condition. Wheat sells now at rather higher prices than it did one year ago, and our own country can now but insufficiently supply either England or France. But let our people make less tobacco and less cotton the next year and the year after, and, I tell you, your millions of wealth will be drawn hence to us, if for these now staples articles, articles of wheat, corn and provisions be substituted. Clear up our lands, and put the utmost breadth of them in everything necessary for the food of man; and every particle that is produced

will find an admirable market the next year. True; our wheat crop is already in the ground, and its quantity cannot now be increased. But one corn crop may—and that is an article which will pay much better next year than either tobacco or cotton."

RAILWAYS OF THE UNITED STATES.

The United States are now ahead of the world in the railway movement, and from what has been done, we may justly look forward with hope and pride to the future. The following is a comparative statement of the railways of the United States on January 1st, of four years stated;

Miles in operation:—1852, 11,565; 1853, 13,847; 1854, 17,811; 1855, 21,310. Miles in construction:—1852, 11,228; 1853, 10,418; 1854, 12,898; 1855, 16,975. Capital invested:—1852, \$335,150,848; 1853, \$408,103,109; 1854, 508,588,038; 1855, 621,316,303.

The total amount of capital invested in railways we think is vastly understated. There were 3,599 miles opened last year.

Had the stringent money market given way, and capital become more easy and plenty, there would no doubt have been some two thousand more miles of railway finished during the past year.—Perhaps it is well as it is, but there can be no doubt that railway construction will be much diminished during the next two or 3 years. Railway shares and other securities are now in bad order throughout the country, and nothing will bring them up again but a long course or rigid economy in management, and a partial cessation of demand for capital to construct new enterprises. The roads built during the past year have labored under disadvantages of no common character, and the only surprise we can express is, that so much should have been done under such unpropitious circumstances. We hope that at the end of the present year railway property will stand in a stronger position than it now does, and that the really valuable property will be properly regarded by those most interested.—*American Railway Times*.

WALKING ON THE SEA.

Like flying in the air, walking on the water has been often essayed but still held to be impracticable. If man possessed the ability like that attributed to the Wandering Jew—of walking upon the great deep, and would invest him with a new power of an extraordinary character. A wonderful approach to the solution of this problem has been made by Wm. K. Phipps, of Farmington, Mass., by the invention of a life preserver, by which he has walked on the sea three miles, from land to land twice, and went ashore within two miles of where the steamer Ocean was burned in Boston Harbour. In a letter to us he states that if he had been on board of that steamer, he would have thought it but a trifling affair to have gone ashore on any of the islands in the vicinity.

Real Estate Register.

AMERICAN WOOL. Our daily papers state that all the broadcloth manufactories in our country have stopped operations because they cannot compete with the broadcloth manufacturers of France, Belgium and Germany. The reason given is, that American wool

is excellent for warp, making a hard, strong, woolen yarn for this purpose, but is unsuitable for weft, as it wants that silky softness peculiar to German wool, which must be purchased for this purpose, but on which there is a duty of 30 per cent., which gives great advantages to German manufacturers.

WIT AND HUMOR.

*Cleanse the stuffed bosom of that perilous stuff,
Which weighs upon the heart.*

NOT SO VERY GREEN.—A young and apparently verdant slip, who gave his hailing place as "old Varmount," found himself surrounded, upon a certain occasion, by a crowd of quizzing upstarts, who seemed bent upon displaying their own smartness, at the expense of the Yankee.

"Hello, Jonathan!" says one, "where you bound?" "Deoun to Bosting, on a little trap," was the reply.

"What's your business in Boston?" continued the inquisitive gentleman.

"Oh, I'm deoun arter my pension money," responded greeny.

"Pension money!" ejaculated whiskeree—"how much do you get, & what are you drawing pension money for?"

"Oh!" answered the countryman, "I get four cents every year—tew mind my own business, and tew let other folk's business alone!"

The crowd had no more remarks to offer. The answer was entirely satisfactory.

"Julius, 'spose dere is six chickens in a coop, and de man sells three, how many is dere left?"

"What time of day was it?"

"What has that got to do with it?"

"A good deal. If it was arter dark dere would be none left; dat is if you happened to come along dat way."

"Look heath, nigger, stop dem pussonal'ties, or I'll shy a brick at dat head of yourn."

"Dick, I say why don't you turn the buffalo robe the other side out—hair is the warmest."

"Bah, Tom, you get out. Do you suppose that the animal himself don't know how to wear his hide?"

I DIDN'T SAY BRISTLES.—The Louisville Journal relates the following anecdote:

We remember that some years ago, Roger M. Sherman, and Perry Smith, were opposed to each other as advocates in an important case before a court of justice.

Smith opened the case with a violent tirade against Sherman's political character. Sherman rose and very composedly remarked:

"I shall not discuss politics with Mr. Smith before the Court, but I am perfectly willing to argue questions of law, to chop hairs or even to split hairs with him."

"Split that then," said Smith, at the same time pulling a short rough looking hair from his own head, and handing it over toward Sherman.

"May it please the honorable court," retorted Sherman "I didn't say bristles."

N. CAROLINA AGRICULTURAL SOCIETY.

A called meeting of the North Carolina State Agricultural Society, held in the Commons Hall in the city of Raleigh, on the 10th day of January, 1855.

Meeting called to order by the President, and James F. Taylor, of Wake, appointed Secretary, *pro tem*.

A quorum of members of the Society, not being present, the following gentlemen came forward and became members of the Society, viz ;

Walter L. Steele, of Rockingham, Richmond County; Jos. B. Cherry, Bertie co.; Dr. Milton Selby, Hyde co.; Hon. D. M. Barringer, Cabarrus co.; William H. Lyon, Granville co.; B. H. Tomlinson, Johnson co.; C. B. Wood, Craven co.; E. J. Shaw, Sampson co.; Hon. W. A. Graham, Orange co.

A quorum being present, on vote of the Society, the office of Recording Secretary was declared vacant.

On motion of Mr. K. Rayner, the Society proceeded to elect a Secretary; and John C. Partridge was declared duly elected, having received a majority of the votes cast.

On motion of Col. L. Humphreys, the following resolution was adopted:

Resolved, That the Ex. Committee be authorized to adopt, as the organ of this society any agricultural periodical published in this State, which they may think proper, and that they be requested to take such steps towards securing subscribers, as in their judgment they see proper.

On motion of Dr. E. A. Crudup, the following resolution was adopted:

Resolved, That a committee of three persons be appointed by the President to revise and superintend the publication of the proceedings of this Society, from its organization.

The Chair appointed the following gentlemen to compose the committee raised under the foregoing resolution, viz. Dr. Edward A. Crudup, and Messrs. W. D. Cooke and T. J. Lemay.

The following resolution was introduced by Hon. Kenneth Rayner, of Hertford, and unanimously adopted:

Resolved, That a Committee of five including the President, be appointed by the Chair, to draw up a memorial to be presented to the General Assembly, now in session, asking a contribution from the Treasury of the State, towards the payment of premiums and other expenses incident to the management of the affairs of the North Carolina State Agricultural Society.

The committee appointed under this resolution are Dr. Edward A. Crudup, of Franklin; Mr. R. A. Hamilton, of Granville; Mr. J. W. Norwood, of

Orange; Dr. Frederick Hill, of New Hanover; and (by order of the Society,) the President.

Vacancies having occurred in the Ex. Committee, by the death of S. W. Whiting and Jere Nixon, it was suggested that the vacancies be filled by the President.

The meeting adjourned till Friday evening at 7 o'clock.

RALEIGH, January 12, 1855.

The North Carolina State Agricultural Society met in the Commons Hall, at 7 o'clock, P. M. pursuant to adjournment—Hon. Thomas Ruffin, the President, in the Chair.

G. Mebane, esq. of Alamance, and Samuel P. Hill Esq., of Caswell, became members of the Society.

Mr. Crudup reported that Mr. Partridge, who had been elected Recording Secretary of this Society, found it necessary, in consequence of other duties, to decline the appointment; upon which Mr. Rayner moved that T. J. Lemay be appointed Recording Secretary, when the Society proceeded to the election by ballot.

Mr. Taylor who was appointed to receive the votes, reported that 32 votes were given, and Mr. Lemay having received the whole number, was duly elected.

Dr. Crudup, from the Committee to prepare a memorial to the Legislature, asking an appropriation from the Public Treasury in aid of the funds of the institution, submitted the following memorial, which was read and adopted:

The memorial of the State Agricultural Society of North-Carolina to the General Assembly respectfully represents;

That in the year 1852, a Society was formed by a few citizens, who felt an interest in the Agriculture of North Carolina and a deep desire for its prosperity. It was formed in the hope and belief, that such a Society, if properly conducted, might greatly promote the improvement and profits of our husbandry and other pursuits connected with it, and thereby add to the wealth and welfare of the State. In the beginning, the Association was altogether voluntary. But the Legislature of 1852, believing such a Society an useful instrument for effecting the ends proposed, gave it a legal and permanent existence by an act of incorporation, under the name of the State Agricultural Society of North-Carolina. Many persons have, since, united themselves to the Society; and it has increased considerably—numbering nearly one thousand members. It has proceeded to fulfil its purposes, as far as it could obtain pecuniary means, by procuring and improving convenient grounds for holding a Fair in the vicinity of Raleigh, and holding a Fair in the month of October in each of the years 1853 and 1854.

Such Associations have been eminently useful in other places, and, particularly, in some of our

sister States of the South. They are beneficial by periodically bringing together the most intelligent and enterprising agriculturists, and others engaged in vocations auxiliary to agriculture, for mutual instruction, emulation, and pecuniary and honorary rewards. Hence the Legislatures in several of the States have deemed it just and wise to countenance and sustain Societies of that character, not only by granting charters of incorporation, but furthermore, by endowments, to enable them in part to defray the expenses incurred in procuring Fair grounds and keeping them in order, paying premiums to successful competitors, and otherwise in conducting the operations of the Society.

Your memorialists show, that hitherto the income of this Society (with the exception of a few donations) hath been derived entirely from an initiation fee, an annual voluntary contribution of each member, and a toll for admission to the Fair grounds during the annual exhibitions. These fees and tolls are, of course, small, in order to invite accessions to the Society, and a larger attendance of visitors, and thereby diffuse more extensively the interest taken in the proceedings of the Society, and the benefits to be derived from them. Within the two years of the Society's existence, an aggregate sum of eleven thousand five hundred dollars has been thus raised; which, it is not doubted, your honorable body will deem not in considerable, but creditable to the public spirit of our citizens, in view that it was raised by the self-taxation of individuals for public uses. But even that sum has proved inadequate. For the whole of it has been disbursed on the Fair grounds, in premiums, unavoidable and incidental charges; and there is, at this time, a deficit in the funds of the Society, needed to meet its engagements, of about twelve hundred dollars.

It must be obvious, that the existence of the Society is very precarious and its usefulness much circumscribed, while it is thus dependent, for indispensable funds, on such uncertain sources.—A person ceases to be a member by withdrawing when he pleases; and no further contribution is to be expected from him. So, a week of bad weather during the period selected for the Fair, prevents the attendance of visitors, and receipts from that source are cut off. Those causes may, therefore, greatly curtail the income of the Society, and deprive it of the ability to meet its engagements, on which its capacity to do good depends. In order that it may be the better understood, it is to be borne in mind, to bring about real competition—the life of improvement—liberal premiums must be offered to those who excel; and that the list of premiums must, necessarily, be adopted and published several months before the holding of the Fair, that exhibitors may be attracted to it. It is then apparent to your Honorable Body, that the means of the Society for offering and paying the premiums are always prospective merely—that they are, in truth, to be made of the sums expected to be received at the approaching Fair for the fees for membership and the tolls from visitors. Consequently, a deficiency of those tolls, from any of the causes before alluded to, leaves the Society de-

stitute of a fund to comply with its engagements, and disappoints competitors. In such an event, further attendance of the public, either as exhibitors or visitors, could not reasonably be expected; and the dissolution of the Society, or, at all events, the loss of all its attendant benefits, would almost certainly follow—a result, in the opinion of your memorialists, seriously to be deplored. The Fairs held during the last two years, have given much satisfaction to the public, and been productive, as it is thought, of much good to Agriculture and its kindred vocations. Indeed, your memorialists fully believe, that the Society, if it can be kept on foot, will in future years, be more extensively useful by encouraging and improving the Agriculture of North Carolina; introducing and extending the cultivation of choice varieties of fruits to which our diversified soil and climate are so congenial; causing the introduction and rearing of improved breeds of horses, cattle, sheep and swine. and the rearing of domestic fowls; the manufacture at home of the best kinds of agricultural implements, so necessary to the convenient and profitable pursuit of farming, and so very important to the artisans who make such implements; the encouragement of manufactures generally within our borders, and especially of household manufactures.

Your Honorable Body, composed chiefly of persons engaged more or less directly in agriculture, and, at all events, representing constituencies composed of large majorities of practical planters and farmers and mechanics, whose labors are subservient to the profit of agriculture, will, as your memorialists suppose, sympathise with those interests and pursuits, and think them worthy of your consideration, protection and patronage, and be ready to bestow such bounty on them as may be adequate for their encouragement. If your Honorable Body should thus regard those great interests of your constituents, your memorialists presume to express, as they entertain, the belief, that as a practical instrument, through which the legislative patronage and bounty may be dispensed to the agriculture of the State and its kindred arts, none better exists than the State Agricultural Society, if it should please the Legislature to insure its existence and operations by such a permanent or annual endowment, for a reasonable period, as may seem to your Honorable Body requisite for those purposes. It is beyond controversy, that some *certain* fund for use from year to year, is absolutely necessary to preserve the existence of the Society and enable it to discharge its functions usefully to the public. To some extent, such a fund may be counted on from individual contributions. But it cannot be expected that even the most public spirited private citizens can be induced every year through a long series of years to contribute a fund to meet the proper expenditures of a Society embracing the whole State. Hence, your memorialists feel assured that a provision from the Public Treasury is indispensable to the certain continuance of the Society; and they entertain a confident hope, that it will please your Honorable Body to make such appropriations as may seem meet and adequate

in the premises. And your memorialists will ever pray, &c

THOMAS RUFFIN,
EDWARD A. CRUDUP,
ROBT. A. HAMILTON,
FREDERICK HILL,
J. W. NORWOOD.

Mr. Wilson W. Whitaker moved that a clause be added to the memorial specifying the sum asked to be appropriated by the Legislature, to be two thousand dollars.

Hon. D. M. Barringer was in favor of the application, and hoped help would be given; but he was opposed to the motion of his friend (Mr. Whitaker.) He thought it best to leave it just as it had been presented by the Committee. The matter would be referred to the Committee on Agriculture, and the amount of aid proper to be given, would be more properly a subject for their consideration; and a request for a particular amount, by this body, might tend to embarrass their action.

The President thought it would be best to leave it as the Committee had presented it. It would be more respectful; and stating a definite sum would be too much like sturdy begging.

Mr. Whitaker only desired to ascertain the sense of the society, as to what they deemed necessary for the success of their operations.

The question was then taken upon Mr. Whitaker's motion, and decided in the negative.

Mr. Clark, of Edgecombe, and Mr. Smith, of Halifax, were appointed a committee to present the Memorial to the Legislature.

Dr. Crudup stated that no premium list had yet been prepared. It had been delayed already too long for the want of funds, to embrace some important branches of agriculture. He alluded particularly to the best method of raising wheat, the season for preparing ground and sowing having already passed. And a leading object of this meeting was to devise some plan of raising a premium fund. Virginia offered a premium list in encouragement of her industrial interests of \$8,000; New York and other States had shown a similar liberality; whilst ours had not been greater than \$1,500. Unless we could have a solid basis on which to found a premium list, we should be crippled and defeated in our objects.

Mr. Smith, of Halifax, thought the society should indicate to the Legislature what amount it thought necessary; and moved that the committee be instructed to ask for \$2,000

The President stated that the committee thought that sum indispensably necessary.

Mr. Bridgers, of Edgecombe, moved to amend the motion by substituting \$5,000, in the place of 2,000. He thought that was not too much; but if the Legislature regarded the sum too large, they could then grant such sum, as, in their wisdom, they might think proper.

The motion of Mr. Bridgers was negatived.

Mr. Smith then modified his resolution so as to ask the Legislature for \$2,000 a year, provided the Society raise a like amount.

Mr. Norwood moved to amend the resolution, by fixing the sum at \$2,500.

Mr. Clark, of Edgecombe, thought it best to leave the sum blank as suggested by his friend from Cabarrus (Mr. Barringer.) By specifying a definite sum, we might ask for less than we can get, and might embarrass the friends of our cause in the Legislature.

Mr. Mebane, of Alamance, thought it best to leave the matter to the committee, without any positive instructions.

Mr. Whitaker thought, from what had occurred, that it was right to come to some conclusion as to the amount. There appeared to be a considerable difference among themselves; and hence it appeared proper that the vote should be taken.

Mr. Barringer again addressed the Society. If we ask for too much (\$5,000) he was very sure we should get nothing; but by asking for a moderate sum, or leaving the amount to the discretion and liberality of the Legislature, he was confident we should get something.

Mr. Rayner made some remarks touching the term of the appropriation sought from the Legislature, and expressed the opinion that that body would be more likely to make it for two years, than for a longer time—renewing it from time to time as might be deemed requisite and expedient.

Mr. Norwood's amendment was adopted.

The question then recurring on the the original motion of Mr. Smith, was decided in the affirmative.

Mr. Rayner expressed the opinion, that if we could get the members of the Legislature to attend our meetings, and let them understand the objects we are at, they would be induced to unite themselves to our association, and the very object we have been laboring at for the last hour will be secured. Many of them think that it is a Wake county concern. When they see and learn that it is a great and important State affair—when they see and know the wide scope of our objects, embracing the Agricultural, Mechanical, Manufacturing and Mining interests of the whole State, they will come forward and give us their aid.

Mr. Rayner concluded his remarks, by offering the following resolutions, viz:

Resolved, That Mr. Wilson W. Whitaker be requested to ask of the House of Commons the use of the Commons Hall on to-morrow after-

noon, for the meeting of the State Agricultural Society, at 4 o'clock, with a request that the members of the General Assembly will attend and give us their assistance in promoting the cause of Agriculture.

Resolved, That the President appoint two members of the Senate, and three members in the House of Commons, to request such members of the two Houses, or any other gentlemen in the City, as they may think proper, to attend and deliver addresses before the Society to-morrow afternoon.

Mr. Barringer was afraid the members would not be induced to attend, and possibly might not grant the use of their Hall, as they were now so deeply engaged in the business of the Session.—He was sorry to say that it was after several efforts that they could get the House to adjourn in time for this meeting, and he thought it might be better for his friend to request the use of the Senate Chamber.

Mr. Clark said, if the House would not grant the use of their Hall, he would promise the Senate Chamber to the Society at any hour they might choose to occupy it.

After some further conversation, the question was taken on Mr. Rayner's resolutions, and decided in the affirmative, and the following gentlemen were appointed the committee under the same, to-wit: Messrs. Rayner and Cunningham, of the Senate; and Messrs. Hill and Long, of Caswell, and Smith, of Halifax, of the Commons.

Dr. Cradup called the attention of the Society to the condition of the Fair Grounds. The land was donated to the Institution by the City of Raleigh, & he understood the Commissioners were ready to make the deed at any time. At a previous meeting a committee were appointed to attend to the matter; but it was not known, as they had made no report, whether they had done so or not. He therefore moved that a committee of three be appointed by the Chair, to look into the title of the Fair Ground, and if the deed has not already been given, to secure it.

Gov. Manly, Dr. Cradup, and B. F. Moore, Esq., were appointed said committee.

On motion of Mr. Cunningham, the Society adjourned until to-morrow 4 o'clock, P. M.

COMMONS HALL, Jan. 13, 4 P. M. 1855.

The State Agricultural Society met pursuant to adjournment.

The President, upon taking the Chair, remarked that an opportunity was then offered to gentlemen present who were not members, to join the Society, as the Treasurer was at the Secretary's desk, and would receive their names and initiation fees.—Whereupon the following gentlemen appeared and became members. viz:

Hon. David Outlaw, of Bertie; Hon. Asa Biggs, of Martin; and Messrs. A. H. Caldwell, of Rowan; Wm. Eaton, Jr., of Warren; James Banks, of Fayetteville; Benjamin J. Howze of Chatham.

At the request of Mr. Rayner, the President explained, in a very clear and forcible manner, the

objects of the meeting. This Institution, he said, was not a local one—it was general, in embracing the agricultural interests of the whole State. It had its origin in the patriotism and public spirit of 17 gentlemen who met in this City, from different sections of the State, two years ago. To give encouragement to their efforts, the citizens of Wake and Raleigh offered them grounds and the improvements for the purpose of an annual Fair, for exhibition of samples of improvement in the productions of the earth, in agricultural and mechanical implements, in articles of domestic manufacture, and in domestic animals.

The great purposes of the Fair were to lead to the reclaiming and fertilizing our poor exhausted fields and improving our lands generally, by adopting the best method of making and applying manures, of ditching, draining and cultivating the soil; to impart information and stimulate effort in rearing and taking care of stock; to add to our crops of wheat, oats, rye, rice, corn, cotton, tobacco, &c.; to improve the method of getting turpentine and of procuring the spirits; to advance the mining interests; to develop the vast mineral resources of the State; and to import and improve every species of the valuable fruits. This, he said, was to be effected in two ways—the one by offering rewards of honor and pecuniary value to successful competitors; the other in the advantage of bringing all our citizens often together, communicating mutual instruction, arousing the zeal & energies of all, & making them think, and feel, and act alike, in the great work of individual and State improvement. Another object, he stated, was to encourage a home agricultural paper, which should be well supported, to make the best selections from the various agricultural works from abroad, and give the experience of the skilful and enterprising agriculturists of our own State. The honorable President then proceeded to adduce instances showing the good effects of the Institution. He said, a gentleman, (Mr. Whitaker,) a member of the House of Commons from this county, one of the committee at the first Fair to examine implements, and who was also on the same committee at the second, had expressed to him his astonishment at the great increase and improvement in the articles of mechanical skill and industry on exhibition at the latter over the former. Mr. W., he believed, was in the House, and was requested to say if he had not understood him correctly. Mr. W. replied he had. The President then proceeded to comment upon the fact, that Mr. Sloan, of Guilford, a very enterprising and intelligent farmer, had been induced to purchase in New York an improved mowing machine which mowed five acres in two hours, and the hay was almost ready at night to be hauled to his barn. Thus was the work of five good mowers, and five other men to assist, for a whole day, accomplished by this labor saving machine in two hours! How, he asked, were we to get such implements, unless we first knew their importance and then their existence? It was the province of the Fair and of the Press to impart this knowledge, and these could not be expected to exist by private enterprise alone. He next alluded to the improvement in fruits, and paid a handsome tribute to Messrs. Joshua and Thomas Lindley, who are extensively and

successfully engaged in the raising of fruit trees, and said he believed they had, by their own private enterprise, brought out the finest collection of peaches in the world. He spoke also in high terms of their fine apples, and remarked upon the advantages we shall have in sending these fruits to New York two months before their ripen, the high prices they would command in that market, their relative value to flour; and their importance, when the cereals fail, in contributing to supply the poor with good and wholesome food. The foregoing, he said, were objects of our encouragement. And this encouragement must be given in the shape of premiums. The funds for these must be raised by the fees and dues of members and the receipts at the gate; but this would be inadequate, and one object of our meeting was to ask aid from the Legislature. This, he repeated, was indispensably necessary to encourage all branches of industry, the advantages of which he here enumerated.

Our own mechanics, if properly encouraged, (he said) will equal in skill, as they do in intelligence & industry, any in the world.

In speaking of sheep husbandry, he alluded to his own success in raising that profitable animal, and promised any gentleman present, who would come to dine with him any day in the year, he would give him a dish of good mutton. He concluded by remarking that he had thought it was his province to state facts, and leave the judgment of his hearers to act without any meretricious appliances. He had, indeed, in this matter a zeal—he would not say a holy zeal, but that which was next kin to it; for the encouragement of such improvements as had been alluded to, was next to the advancement of our holy religion. All recollected, whose heads were grey as his own, our having, in former times, to get out our wheat with flails, or by the dirty method of trampling it out with horses.

What improvements have we now! and what a blessing to mankind are these improvements! He then briefly, but happily alluded to the *material* aid, as the phrase now is, which other States, as a noble example to us, have given to those improvements. In Georgia, they have a State Society, supported mainly by the public Treasury. In Virginia, where they have not more zeal than we have—tho' they talk, breathe more—they have three societies. One has a permanent endowment of \$60,000. Another, he regretted to say, had attached to it a respectable portion of our own citizens, who, he thought, would do better to give their influence and means to their own State; and was about expending a large fund, (which he thought was useless) on a model farm. He thought the money would do more good distributed in premiums.—All this, however, was founded in the right spirit, and indicated to us our duty.

Hon. WILLIAM A. GRAHAM was next called out, and his remarks were highly entertaining and encouraging, and it is regretted that but a meagre sketch of them, as of the very able and patriotic addresses of other gentlemen, can be given. Gov. Graham commenced by saying, he was a very poor farmer, and desired to become a better. He had been so situated that he had not been able heretofore to attend this Association, but no one had

looked upon its progress with greater interest than he had. He believed we had the elements of a great and flourishing Society. We had now 900,000 inhabitants, and the materials to make a great agricultural State. This was the great pursuit of our people; and he hoped by our united efforts these resources would be brought out. The time was when this work appeared discouraging, which he showed by alluding to the vast extent of our territory and the difficulties of getting to market; but the work of improvement, giving to the different sections of the State facilities for the transportation of produce, had commenced, was advancing, and he hoped by our next annual meeting the citizens of the West, 150 miles off, would be enabled to breakfast at home and dine here. Similar expedition had already been effected. The citizens of Wilmington could now dine at home and take their suppers in this city. Those means of intercommunication would bring our people together and make us a united and harmonious people. To love our country, as remarked by Burke, we must make it lovely. Ours is already so, in many respects—in scenery, climate, healthfulness, the abundance and diversity of its productions, &c.—but our object was to make it so by improvements: and the energetic operations of the State Agricultural Society, would contribute largely to advance important branches of these improvements. He would therefore give it his cordial support.

Hon ASA BIGGS being called upon, favored the Society with an interesting and patriotic address. He said he could not hope, in an association of this kind, to throw any light—he was no farmer—his attention had been turned to other subjects; but on all occasions, either at home or abroad, he had never failed to give his influence to the cause of agricultural improvement. He then proceeded to give the progress of the work in the county (Martin) from which he came. They had a county Society, of which he was a member; and they made an exhibition at the last Fair equal to any in the State. They are doing great good in that part of the country. The same result would flow from the State Society. He had not heretofore been able to become a member, but he had urged his friends to attend, and to take an agricultural journal, and many such papers were now circulated among them. It was out of his power to express the idea he had of the importance of this movement, which he hoped would receive every necessary encouragement.—The President had alluded to the turpentine business, and the mode of getting the spirits. This had been detrimental in his county; but it was now giving out, and the people were turning their attention more to agriculture. He believed the piney woods, and the sandy lands there were susceptible of improvement and capable of producing cotton and the grains almost equal to the river low grounds, which were subject to overflow.—They were draining these lands, and collecting astonishing amounts of manure, and succeeding well.

WM. EATON, Jr. Esq., of Warren, being called upon, said, it was once remarked by a great man, Daniel Webster, of Massachusetts, that agriculture

was the lion of America, and he never said anything his life more just or more true. Ours is the great agricultural power of the world. Great Britain, France & Russia are now seeking to gather laurels in the iron harvest of the field, but ours are the peaceful triumphs of the plough; and I contemplate with more pride these fruits of the victorious enterprise of my countrymen, than an ancient Roman did the trophies borne by the legions of the republic, when they returned to Italy clad with the spoils of conquered nations, and of captive kings. We are principally a nation of agriculturists. North-Carolina is decidedly and emphatically an agricultural State, as much so as any State in the Union. Throughout our whole country, the employment of the planter is a favorite one, and is deservedly held in high estimation. Health and longevity; peace, plenty & contentment; an ardent patriotism, a manly independence, and a generous hospitality, are associated in the mind of an American citizen, with green fields and waving harvests. The poet has sung the pleasures of rural life, & has drawn from its scenes his most beautiful pictures, & brightest imagery, and the philosopher has enjoyed with heartfelt satisfaction its calm and tranquil delights. The greatest men of America have not deemed the pursuits of agriculture beneath them, and the chief magistrates of the republic have retired from their exalted station, to spend the evening of life among rural scenes and the soft charms of cultivated nature. In the opinion of the wise and good of every age and every land, the pursuits of the husbandman are in a high degree honorable and useful, and eminently favorable to human virtue and happiness.

I should be false to my country at large, false to my State, and false to the county of Warren which I have the honor to represent in the Senate, if I did not, as a member of this General Assembly, do every thing in my power to advance the interests of agriculture. I look forward to the dawning of a brighter day in North-Carolina. I look forward to the day when our exhausted fields of broomstraw and bramble shall be fertilized, and made to reward the labors of the husbandman, and when the rich and lovely valleys of the Catawba, the Yadkin, the Cape Fear, the Neuse, the Roanoke, and the Chowan shall teem with abundance; shall yield in profusion the luxuries and delicacies of life as well as its necessities and comforts; and shall sustain a numerous, a happy and an intelligent population. A deep and lively interest has been recently manifested in the cause of internal improvement. Railroads and other facilities of communication are certainly of great and inestimable value; but unless we improve the soil, and increase the productive capabilities of the country, North-Carolina can never become a very prosperous State, nor her people comfortable and happy, although commerce may spread out its white sails on her coast, and the locomotive may outrun the steeds of the turf on its own pathway from the ocean to the mountains.

The Hon. D. M. BARRINGER being called upon, said the call was wholly unexpected and he should refuse to answer it if he did not fear an erroneous inference might be drawn from his silence, unfav-

orable to a cause which he most heartily approved. He was a lawyer and had no great practical experience in agriculture; yet he was willing to acknowledge that he had followed the plough, and was among those who were not ashamed for it to be known that we are working men. The great secret of success in these institutions, is the competitions they raise, and their tendency to bring us together and make us North Carolinians in deed and in truth, as we are by birth and in name. He vividly portrayed the great and substantial improvements which had been made in the State of Georgia through their instrumentality. He then proceeded to sustain the proposition that Internal and Agricultural Improvements go together; they help and depend upon each other; in the course of which he referred to the marked effect of Internal Improvements in the valley of the Catawba. On his return home, after five years absence, he had seen, under its influence, agricultural products doubled, and more; Land that had produced 800 pounds of cotton, now produced 1800 pounds; lands that had produced 12 bushels of wheat, now produced 30 bushels. This was owing to the correlative influence of Internal Improvements and Agricultural Improvements upon each other. He concurred with the President, in his remarks not only as to the cereals, but the fruits, stocks, &c. Expressed the belief that Western North-Carolina was the best wool-growing country in the world; adverted to the steps taken by Napoleon to import improved sheep; he had a large number brought from Spain; and now the best wool is produced in France, and it is a source of great profit. By bringing men together here, and by talking over these matters, we increase the desire to improve, and one result will be the establishment of a great wool-growing business in the West. He concurred with the gentleman from Warren that this would be the greatest agricultural country in the world, and North-Carolina would be distinguished by the important part she would bear in that honorable vocation.

HON. DAVID OUTLAW, in answer to a call, said the call was as unexpected to him as to the gentleman who had just preceded him. He came there to receive, not to impart instruction. He then proceeded for a few minutes to speak in the happiest, most glowing and eloquent terms, of this important movement. He could not say he had no experience in farming, but his attention had been turned to other subjects less to his taste.—He would rejoice if his duties would allow him to devote his time exclusively to this delightful employment. He regarded the pursuit of agriculture the most virtuous and honorable calling in the world; and he hoped the young men of the country, instead of going into the professions, would follow it. When they see, (said he,) that you, Mr. President, and others whose reputation is not confined to our own State, but extends the length and breadth of the country, are devoting your time and talents to this employment, they will be induced to follow the example; and much good will be accomplished. He concluded by remarking that he was willing to show his regard for the cause, by voting to give it substantial aid.

Mr. BANKS, of Cumberland, being loudly called, arose, & in his peculiar vein of humor & good sense, for a few minutes entertained the meeting. He said the remark was trite, but applicable, that it was dangerous to speak of war in the presence of Hannibal. His situation reminded him of an anecdote of an old Scotch lady, whose sons were taken prisoners by Napoleon, and chained to other prisoners. When she was informed of their misfortune, she exclaimed, "God pity the man that is chained to my son Jemmy!" He could say, if the Society rested upon the speaker, or any thing he could say, it was in an unfortunate predicament. But the compliment of the call was intended to his county. He wished his friend Elliott, the President of the Cumberland Agricultural Society, was present. He could honor it by making a speech, giving "material aid," or by proofs from his own experience of the success of enlightened, systematic farming. But Cumberland was not strictly an agricultural county. Her pursuits, (which he enumerated,) were diversified, all reciprocally acting upon each other, and giving encouragement to the agriculturist. He gave an amusing account of his early attempts at cultivating the soil, together with his abandonment of it for other pursuits, and expressed the hope that he should finally return to it; for he never knew a Scotchman in his life, whatever might be his circumstances or his calling, who did not make farming his ultimate hope and aim. He hoped the operations of the Society would excite a spirit of enquiry and emulation throughout the State, that would lead to great and lasting improvement. He should be happy to contribute something, however small, to advance the interest and welfare of the good old North State. He had always admired the just and noble sentiment expressed by the late distinguished associate of the President:

"Carolina! Carolina! Heaven's blessings attend her;

"While we live we will cherish, protect & defend her;
"Tho' the scorner may scorn at, and wiflings defame her;

"Yet our hearts swell with gladness whenever we name her."

On motion of Mr. Rayner at the close of this address, the Society adjourned, subject to the call of the President.

THOS. J. LEMAY Sec'y

SETTING A LOT IN GRASS FOR PASTURE AND HAY.

In conversation with a friend some days since, he told us that he had a lot of about $1\frac{1}{2}$ acres, that had been mowed and ashed, but which he had failed to set in clover, sowed with oats, last year, that the oats were so rank that they fell and rotted on the ground, and the clover died out—he stated also that he was anxious to put the lot in something next spring, but did not wish to sow oats again,—that the ground from being lilly was subject to wash very much, and therefore was not adapted to corn; that his desire was to get it in grass for the double purpose of hay and pasture, and enquired of us, how he should manage to attain his object, asking at the same time whether winter ploughing would not be of service. As there may

be others similarly situated, with similar aspirations, we will detail here, what our advice to him was.

We advised him, if his soil was stiff clay, to seize upon the first favorable period during winter when the ground was neither wet nor dry, but moist, to plough it, and to plough it horizontally, that is, across the hill, and turn the furrow slices down hill, to prevent washing;—and to be sure to plough deep. That next spring, he should roll first and then harrow until he should get the ground into a fine tilth, then roll again, when it would be fit to have the grass seeds sown thereon; that, prior to sowing the grass seeds, he should spread on his $1\frac{1}{2}$ acre lot, 7 bushels of bone-dust, and then sow his lot with the following grass seeds in the quantities named, viz:

$1\frac{1}{2}$ bushel Italian Rye grass seed,

$1\frac{1}{2}$ peck of Timothy Seed,

$1\frac{1}{2}$ bushel of Orchard-grass seed,

20 lbs. of Red clover seed, and

1 bushel of Kentucky blue-grass seed.

To sow the timothy and clover seed, each separately by itself, and that he should mix the other seeds together and sow them, first *moistening* the orchard grass seed, and letting it lay in bulk a day before mixing it with the others. And that, after the seeds were sown, to harrow the whole in lightly with a *light* garden harrow, and roll the ground. We informed him that, as the Italian Rye grass was an *annual*, he might cut it for hay when it came in bloom, with the assurance, if the weather was seasonable, of getting a good crop. That as soon as he had cut, cured, and removed, his crop of hay, to sow on the field 2 bushels of plaster, and 4 bushels of salt, and he might calculate on having a well set lot for many years, either for hay or for pasture, and that if he top-dressed it with 4 bushels of bone-dust, 10 bushels of ashes, and 4 bushels of salt, in the autumn of every second year and harrowed and rolled them in it would continue to give him luxuriant crops of grass for 10 or 15 years.

As to the time of sowing the seed, we stated that we should be guided by the condition of the soil and weather in the spring—that whenever the soil was sufficiently dry and warm to cause the seeds to germinate, was the proper time for sowing them.

We added further, that if his soil was not a stiff clay, we would defer ploughing until Spring, and until the frost was out of the ground, and the ground in a condition to be worked without injury.

Amc. Farmer.

SUPPOSED ANTIDOTE TO POTATO DISEASE.

It is certainly true that the result of every inquiry or experiment, which promises to throw any light on the mysterious failure of the potato plant, is worthy of attention. A correspondent of The Mark Lane Express, acting on the theory that the disease arises from the want of some element in the earth which is necessary to its healthy growth, (a theory, by the way, which perhaps but few will assent to,) and having observed that where the potato was diseased the stock or vines generally went prematurely to decay, was induced to try the following experiment. He had a plot of land on which he had raised potatoes for three years in

succession. Two thirds of the crop of 1853, were diseased. In the spring of 1854, he planted the half of his plot in the usual way, and the other half had a dressing of silicate of potash, which was neither more nor less than *clinkers*, or half vitrified residuum of coal, adhering to the grates of furnaces. This was ground very fine, and placed in the rows or hills with the ordinary manure. The produce was all sound; the stalks remaining green and strong until the potatoes were taken up. On the other half of the piece, the potatoes were diseased and the stalks or vines decayed early.—If any of our readers should repeat this experiment the public would be gratified by being informed of the result.

Country Gen.

CURIOSITIES OF NATURE.

In an interesting letter to the N. York Courier and Enquirer, Mr. E. Merriam states that there is in Lockport, N. Y. an artesian well four hundred, and fifty feet in depth, from the bottom of which rises a vein of salt water, holding in combination a large percentage of diluquescent chlorides, which, mingling with waters of other veins, produce instantaneous crystallizations of beautiful *science*, in flattened eight-sided prisms of about an inch in length, an eighth of an inch in width, and a sixteenth of an inch in thickness. The laminae of these are so perfect that a single crystal may be divided by means of heat, into two dozen distinct sheets. This well is peculiar in more respects than one. It is accustomed to spout salt water for but a few moments at a time, and then subsiding remains quiet for the space of an hour, at the conclusion of which it again begins to puff and roar, and shoot forth its saline jets. When the workmen were sinking this well, the auger, upon attaining a depth of two hundred and thirty-five feet, fell suddenly about fourteen feet, and reached the bottom of a subterranean river, flowing with so strong a current as to produce a perceptible motion in the upper part of the stem of the auger.

BURNS.

Among the most numerous cases brought into the surgical wards of charity hospitals, every where, may be reckoned the injuries received by burns and scalds, which, when extensive, are too often fatal. In the treatment of these injuries we have had great experience and uniform success when the patients were brought in soon after the injury.—No fatal case of recent burn or scald has occurred in the hospital, although several have been extensive and severe. The universal treatment of all such cases is to cover the parts with wheaten flour, thrown over the wounds by a dredging-box, which, if thoroughly done so as to exclude the air, and prevent its temperature from reaching the suffering tissues, will afford instant relief from pain, and allay all that nervous irritation which is the chief source of immediate danger in all cases of extensive burns. We have had opportunity to test this practice in terrible burns occasioned by explosions of gunpowder, in scalds from the bursting of steam-boilers, in examples of persons while drunk falling into the fire, and others in which their clothes were burnt off the body by the combustion of spirit gas, &c. In all these cases, and in some of

them scarcely any portion of the body had escaped—and notwithstanding in a few of them, the integuments were literally baked, so that extensive and deep-seated supuration and sloughing were inevitable, and had afterward to be endured—the external application of the flour was in the first instance our only remedy, and this was continued for one or more days, while the acute effects of the injury demanded it. The superficial portions of the burns or scalds would often heal under this application alone; and the solutions of continuity, more or less deep, which remained open and discharging, were then dressed with lime-water and oil,* by means of a feather, to which creosote was added if the granulations were slow, or the sloughs tardy in becoming loose. Under this dressing the most formidable burns have been healed; and even when the face has been involved, there has scarcely been any deformity. In one of our patients, the face being horribly burned by an accidental explosion of gun powder, the grains of powder having been imbedded in the skin, very great apprehensions were indulged that the discoloration thus produced would permanently disfigure and deform the Countenance. But, after the persistent application of the flour for three successive days, and until the tumefaction of the face and head had subsided, it was found that, with a few applications of the lime water dressing, the cicatrization was complete, and even the discoloration was removed.

If this simple remedy were resorted to in the severe scalds sometimes occurring from explosions of steamboat boilers, &c., there can be little doubt that the fatality of such burns would be very rare; while the popular and mischievous methods of applying raw cotton, oil, molasses, salt, alcohol, spirits of turpentine, sugar of lead water, ice, &c. to extensive deep burns, are, all of them, injurious, and destructive to life.

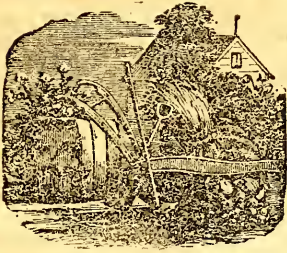
*We would prefer a salve made of spirits of turpentine, sweet oil and bees wax, to lime and oil.

Eos. F. P.

PRESERVING FLOUR AND MEAL.


The patented plan of Thomas Pearsall, of Hooper's Valley, N. Y., for preserving flour, meal, and grain from heating and souring, by having an open pipe running through the center of a barrel of flour or meal, or a number of such tubes in bins of grain, we have tested and found to be an excellent invention. A barrel of Indian corn meal put up in May last, with one of his refrigerating tubes, is now as sweet as it was on the day it was packed. This improvement must lead to a great saving to our country, as it is calculated that no less than \$5,000,000 is lost annually by the souring of flour and the heating of grain in piles, much, if not all of which may be saved by the application of this invention, which is neither complex nor expensive, but simple and cheap. A barrel of corn meal, packed in one of Pearsall's patent tubular barrels, arrived in this city on the 7th of this month from Louisville. It was put up in July, and shipped to New Orleans, was kept several weeks in the hold of a steamboat, and afterwards housed in a warehouse until about the 1st of December, and yet is now perfectly sweet.

Real Estate Register.




RALEIGH, N. C. APRIL, 1855.


TO THE READER.

 This is sent to you as a specimen number of *THE ARATOR*. If you are willing to lend a hand to the work of improvement, and like this new advocate of the cause, send your NAME AND DOLLAR to the Editor.

It would also be regarded as a great favor, and sharpen our PLOW amazingly, if you could raise a club of five to fifty subscribers, and transmit their names, with the money for subscriptions, at our risk, through the mail.

 Whoever will send a club of five or more, with the subscriptions in advance, shall receive one copy gratis. Who will send the largest club? A premium of a silver cup worth twenty-five dollars, (or the cash, if preferred,) will be given for the largest club—one of Ruggles, Nourse, Mason & Co.'s Fan Mills, worth twenty dollars, for the next largest—and a Hay Cutter, worth \$15 for the next—each club to number over fifty subscribers, all paying in advance. For smaller clubs, over twenty-five, books on farming or mechanical arts, or any agricultural implement, worth ten dollars, (or the cash) will be given.

We are confident that many of our personal friends and others who are concerned for the success of the great interests we represent, will cheerfully and without desire or expectation of recompense, exert themselves in behalf of our enterprise—but we are induced to offer the above premiums to rouse the young *Arators* of our State to lend us a helping hand, and hope they may stimulate the friends of the cause to double their exertions to speed the plow.

 If our journal is sufficiently patronized we intend to offer premiums for essays, &c. By the way, would it not be well for our Society to offer a handsome premium for the best essay, to be written on any given topic.

OUR FRONTISPIECE.

The picture placed, as an emblematic device, at the head of the first page of this paper, was en-

graved in Philadelphia, from an original drawing, executed for the purpose, by Miss SOPHIA PART-
RIDGE, of this city—a lady highly accomplished in the art of oil and water color painting, as well as drawing. Our design in this device has been most faithfully and beautifully executed by both the drawer and engraver, and it will be acknowledged by all to be greatly superior to ordinary wood engravings. The first figure that strikes the eye, is the Arator, or plowman, placed most prominently in the foreground, as the sign and representative of the great art, which we labor to elevate, and which lies at the foundation of all other arts and improvements. In the front of the plow is the farm cottage—in the rear the barn and stables. The next, in the distance are seen, the Fair Ground of the State Agricultural Society, during a Fair, with tents in the adjoining lawn, fronting the North, representing the progress of agricultural, horticultural and mechanical improvements; the State Capitol, conveying the idea of the dependence of Government on agriculture, and the duty of government to protect agriculture; and the rail road and cars, representing the facilities of conveying the fruits of agricultural and mechanical labor to market—all—ALL deriving their support from the PLOW, and indicating the independence, prosperity and happiness of our great and glorious old State.

TO OUR MECHANICS.

A considerable portion of the ample pages of *THE ARATOR* will be filled with matter of special interest to the Mechanics of North-Carolina. Our object is three-fold—first, to impress upon this respectable and useful class of our citizens a sense of their true policy, and excite them to improvement; secondly, to induce our people to patronize them and their establishments, in preference to those of other States; thirdly, to augment the wealth and population of our State, by fostering and elevating every branch of industry conducted within its borders. We cannot say what we shall be able to accomplish; but if industry and perseverance, as they merit, can command success, we shall contribute to a speedy & important revolution in favor of the Mechanics, as well as the Farmers, of our native State. There are several articles of special interest to the Mechanics in this number of the *Arator*, to which we invite their attention, and that of the public generally.

After the first of this month, the new postage law requires that the postage on all letters shall be prepaid.

ARATOR—PLOWMAN.

These terms being synonymous, and the plowman being the most important hand in the cultivation of the soil, the name we have given to our paper, we contend, as indicating its object as an agricultural work, is highly appropriate. It also gives our paper *identity*, which we found could not be done by adopting any of the more familiar cognomens, as they have all been long since appropriated by the older agricultural periodicals. To have called it by any of them, would have been as unfortunate as if we had been named *John Smith*; for there are so many *John Smiths*, we should never have known when to answer to our name, and should have been unjustly loaded, too, with many of the reproaches falling at random upon the erring pates of that tribe. The want of familiarity with the term "*Arator*," will render it a little awkward at first; but time will soon give it the familiarity of a household word; and the high rank which it is destined to attain, will gain for it a popularity, we ween, that must finally change the name of ploughman to that of *Arator* altogether; and that important personage will be known and called everywhere, and by every body, by the name of *Arator*, and stand before the world, pre-eminently, as "*THE TILLER OF THE SOIL*."

The value of the plow and plowman, or *Arator*, is handsomely expressed in the following neat little ode, selected very à propos by a plow-boy:

THE GOOD OLD PLOUGH.

Let them sing of the battle fray,
And the deeds that have long since past.
Let them chaunt in the praise of the far whose days
Are spent on the ocean vast.
I would render to these all the worship you please,
I would honor them even now;
But I'd give far more, from my heart's full store,
To the cause of the Good Old Plough.
Let them laud the notes that in music float,
Through the bright and glittering halls;
While the amorous twirl of the hair's bright curl,
Round the shoulders of beauty falls.
But dearer to me is the song from the tree,
And the rich and the blossoming bough,
O! these are the sweets which the rustic greets,
As he follows the Good Old Plough.
Full many there be that we daily see,
With a selfish and hollow pride,
Who the *Arator's* lot in his humble cot,
With a scornful look deride;
But I'd rather take a hearty shake
From his hand, than at wealth to bow;
For the honest clasp of his hand's rough grasp,
Has stood by the Good Old Plough.
All honor be then to those gray old men,
When at last they are bowed with toil;
Their warfare then o'er, they battle no more,
For they've conquered the stubborn soil:
And the chaplet each wears is his silver hairs;
And ne'er shall the victor's brow,
With a laurel crown to the grave go down,
Like the sons of the Good Old Plough.

EARLY CUCUMBERS.

GEORGE W. MORDECAI, Esq., of this city, has had cucumbers on his table, raised in his garden, more than a month. The process of raising them is very simple and easy, and any of our housekeepers might, by a little trouble and care, provide themselves with similar delicacies. Make a hot-bed, by raising a heap of unrotted stable manure four feet high above the earth, fill any number of small boxes 8x10 inches with rich garden mould, in which plant the seed as in a hill, sink them in the manure, so as to leave the top of the boxes only an inch above the top of the heap, then put a glass frame over the boxes, and the work is complete. The frame should be 12 inches deep, and as long and broad as desired, and made as tight as possible. Every warm day, or whenever the air is not so cold as to injure the plants, the top of the glass frame should be raised to admit air, and to water and stir the plants. The heat of the manure, in the process of decomposition, keeps them growing. There are so few of our citizens who give themselves any trouble to provide the luxuries of the garden, that we have been tempted to make this statement, *pro bono publico*—in the hope that many may be induced to follow the example set before them. Cabbage, lettuce, melons, and almost any kind of vegetables may be raised, early, in the same way.

Confirmation.—The above statement was made upon the faith of what we had heard: since it was prepared, we have been kindly furnished with a mess of Cucumbers from Mr. Mordecai's garden, the very sight of which would have made the teeth of any one, much more an epieure, water. They were served up with our dinner, a few days ago, and if the eating wasn't done with a goût, far more delicious than finding "the truth of the pudding" by "chewing the bag," then we are no judge of what's good.

JERSEY OR ALDERNEY CATTLE.

We are indebted to that sterling and valuable periodical, the *American Farmer*, published at Baltimore, for the interesting article on the imported Jersey Stock of Dr. Morton, of Massachusetts, which graces the pages of this number of the *Arator*. It cannot fail to interest every reader, who desires to enrich his mind with a good store of general information, and more especially every one that intends to learn with the view of turning his knowledge to practical account.

The appropriations of last Congress, amount to \$70,000,000.

PRODUCTIVE FARMS.

The March number of the American Farmer publishes an extract from a Report on the Agriculture of Newcastle county, Delaware, shewing the triumphant result of attempts to renovate worn-out lands—and demonstrating their capability of being brought up to a high state of *profitable* improvement, though involving skill, labor and expense. We have always thought that capital was more necessary in agriculture than generally imagined, and that it could not fail to be permanently productive when judiciously applied. The expense, mode and labor of reclaiming these lands in Delaware, are not specified; but the result is pronounced *profitable* by the reliable and practicable men who have signalized themselves in accomplishing the great work.

A statement of the products of six farms, under the proprietors' own eyes, is given.

No. I. COCHRAN GRANGE.—2430 acres, assessed value \$80,000; 560 acres tilled. Average, per acre, wheat 20 bushels, corn 55, oats 45—Marketable value \$7,620 50—Deduct wages of 8 men and boys and board, \$1,200—leaving \$6,427 50. Product to each hand \$803 43.

No. II. GEO. Z. LYBOUT.—542 acres,—value \$37,250—of which 290 arable and 90 embanked meadow, are tilled. Product—wheat, 30 acres corn ground, 15 bushels an acre—27 oats stubble 31 bushels to the acre, 1287 bushels; oats 33 acres, 40 bushels to the acre, 1320 bushels; corn, 31 acres, 55 bushels to the acre, 1705 bushels—Net profit on cattle, potatoes and hay, same season, \$253. Market value of the whole, \$5405 33.—Deduct for labor of five men, board and wages, \$1,000. Product to each hand \$881 06.

No. III. BRYAN JACKSON.—220 acres—value \$18,810. Product—Average to the acre, wheat 32 bushels, corn 50, barley 35, oats 50, timothy and clover hay, 2 tons, @ \$18 per ton.—Net profit on butter \$300: ditto Cotswold Sheep \$561, fat cattle \$500, potatoes, on 3½ acres \$330—Total amount \$5,897 70: Deduct labor of 4 men, wages and board, \$800. Product to each hand \$1,274 42.

No. IV. W. J. HURLOCK.—745 acres—value \$42,422—188 acres tilled. Wheat 40, corn 70, oats 50 bushels, and hay 3 tons, per acre. Total \$5,326. Deduct for wages and board of 4 men \$800. Product to each hand \$1,131 50.

No. V. JOHN C. CLARK.—800 acres—value \$53,040. 100 acres in corn, 40 bushels to the acre, 100 in wheat, 25 bushels to acre, 30 oats, 50, 100 acres in peaches, 71 baskets to the acre, 7100 baskets, \$3,500 for *peaches* at 50 cts a basket.

Hay \$1,500, clover and timothy seed \$600, net profit butter and calves on 70 cows, \$1850, on beef cattle \$1,710, on sheep \$1,000, wool \$600, dairy hogs \$250, 3 acres potatoes \$400, 3 acres pears \$350, goosberries \$25. Total \$15,207 00. Deduct labor of 10 men, wages and board \$2,000. Product to each hand \$1,330 70.

No. VI. WM. REYBOLD.—303 acres arable land, and 137 embanked meadow—value \$31,665. Sale of 67 Cotswold sheep for breeders, \$2,950, mutton and wool 675, net butter from 55 cows \$1,650, peaches \$4,497 12, add to which corn, wheat, and and hay, and a total is made of \$14,310 92. Deduct wages and board of 7 hands, and the product to each hand is shown to be \$1,844 41.

These are facts of great interest to all engaged in agricultural pursuits. If this is done in Delaware, *something* can be accomplished in North-Carolina. What that is, must be determined by time and experience. We cannot hope for the same general success; but in some favored sections, it may be realized in individual cases. Every one, in every place, may safely and profitably strive to improve, provided he proceeds with caution, according to the unerring lights of experience, and gives the matter his careful personal superintendence. It is his duty and interest to do it. Whoever shall strike out the best general method for our climate, soil and institutions, will erect for himself a monument more majestic and durable than the Pyramids of Egypt; and be enabled to exclaim with the bard of Apulia,


"Exegi monumentum ære perennius,
"Regali situque pyramidum altius!"

MANUFACTURE OF BOOTS AND SHOES.

We intend to urge the establishment, vigorous prosecution and advancement among us of every branch of business; and by the help of the friends of this kind of improvement in North-Carolina, we hope to succeed in producing a glorious revolution in the good old State on this subject. We have truth, and right, and justice, and many noble and patriotic hearts on our side: THESE are MIGHTY and MUST PREVAIL. We were among the original agitators of other important improvements in North-Carolina, which were less popular and less hopeful in their inception; and which we have had the proud satisfaction so see carried on to the approach of the "full tide of successful experiment," and commanding the enthusiastic, and almost unanimous approbation of our citizens; and should we not be encouraged to labor for others, predicated upon these, and upon which these will be more firmly based?

It is not the lack of industry, the unproductiveness of our soil, nor the small amount of money made, that has retarded the industrial pursuits of North-Carolina. Her people are industrious, their labors are rewarded with an abundance of the fruits of the earth, and they make money. But hitherto they have given the citizens of other States an enormous percentage to carry their produce to market in the raw state—paid them to manufacture what they have made, to the tune of one hundred to three hundred per cent.!!!—paid them to bring back the manufactured articles, and paid them enormous profits to furnish us with the articles of *foreign* growth and manufacture, which we have consumed as necessities or luxuries! This has been paying for the whistle at too dear a rate. It has been making us literally, "hewers of wood and drawers of water" to the North long enough—too long by ninety-nine one-hundredths of the time; and this course of things should now be promptly arrested.

We have long thought that North Carolina ought to MANUFACTURE HER OWN BOOTS AND SHOES at least. Who can tell the amount of money annually sent out of the State for boots and shoes? We have no *data* to enable us to give a definite answer to this question; but we have one fact upon which to found a calculation that will lead to a conclusion which cannot be very wide of the mark, in furnishing some idea of the enormous amount, and which cannot fail to open the eyes of our people to the immense mine of wealth which they are every day *trampling under their feet!*

 The annual manufacture of shoes and boots in Massachusetts alone, for the *Southern* market, exceeds TWENTY MILLIONS OF DOLLARS!

Now, this twenty millions worth of boots and shoes, to say nothing of the great amount manufactured in other Northern States for the same market, divided among the following thirteen States, which we class under the head of "South Market," draws from each, supposing they purchase in proportion to population, the sum here annexed to its name, dropping fractions—taking, it will be seen, from the pockets of the people of North Carolina, the snug round sum of TWO MILLIONS OF DOLLARS *annually!* Add one million more for the manufacture of other States, and we have the sum of THREE MILLIONS every year paid by the people of our State as a tax to the North for shoes and boots alone—more than seven times the amount of revenue heretofore paid by them

for the support of their government. Our capitalists—our enterprising and patriotic citizens will be blind as bats if they suffer this grievous evil longer to exist. We have the means of applying a remedy. The facilities for transportation abroad and among ourselves; our favorable climate; the abundance of materials which may be supplied at home; and the sure and certain profits of this particular business—all, all invite to the enterprise. If a single individual will not embark in it alone, let a company be forthwith formed with ample capital, and set in operation in this city or vicinity, a BOOT AND SHOE MANUFACTORY on a scale commensurate with the wants of our people. There are other views of this subject which address themselves with force to the statesman, the patriot, and the man whose interest is identified with the general prosperity—such as the increased revenue to the State, flowing from the millions of money permanently secured for investment at home—the increase of industrious and productive population, enhancing the value of lands and tenements, and affording ready sale and good prices for our surplus agricultural productions.

There are other branches of business of equal importance, which should be established among us on a large scale, such as Tanning, Carriage-making, Cotton and Woollen Manufacturing, the Manufacturing of Agricultural Implements, &c., &c., to which we shall hereafter advert. As this article is already sufficiently extended we shall close by subjoining the following table referred to in the foregoing remarks.

Table shewing the amount of Shoes purchased by Southern States from Massachusetts.

Virginia,	\$3,400,000	Mississippi,	\$1,300,000
N. Carolina,	2,000,000	Louisiana,	1,080,000
S. Carolina,	1,400,000	Texas,	490,000
Georgia,	2,100,000	Arkansas,	480,000
Florida,	200,000	Missouri,	1,500,000
Alabama,	1,690,000	Kentucky,	2,160,000
Tennessee,	2,200,000		

AN ADDRESS before the Orange County Society for the promotion of Agriculture, the Mechanic Arts, and Manufactures, by PAUL C. CAMERON, Esq., at the first annual Fair of the Society, October 27th, 1854. Printed by D. Heartt & Son.

We are indebted to the politeness of the author for a copy of this neatly printed and most excellent address, which we regret was received too late for extracts in our present number. It is replete with facts and reflections of the highest interest to the whole people of North Carolina, couched in the most felicitous and spirited language. It reflects high credit upon the head and heart of its author, who has distinguished himself as a zealous and able advocate of improvement in his native State, and cannot fail to be read with interest and profit

by every true son of North Carolina. We shall take the earliest opportunity to spread copious extracts before our readers.

LEGISLATIVE AID.

For the information and gratification of our readers, we insert below two very important laws passed at the last session of our Legislature, for the promotion of the industrial pursuits of the State. This is a good beginning. Let all of our citizens help on the good work, and avail themselves of the encouragements which, from time to time, may be given them.

We take occasion here to remark, that we have high satisfaction in seeing the objects for which we have been earnestly laboring all our life—and for a long time almost alone—now being accomplished. Ever since our first connexion with the press in 1827, we have had a steady eye to agricultural advancement in North Carolina; and, in 1845, so deeply convinced were we of the importance of arousing our farmers to action, that we commenced the publication, without previous subscription, of a monthly periodical devoted to their interests, called "The North-Carolina Farmer," which we continued, at a sacrifice for five years, amidst the multiplied and arduous labors demanded by the chief business from which was derived our support; (nor did we abandon it until forced to do so by declining health;) and in which we urged, from first to last, all the important measures which we have since had the pleasure to see adopted. [Vide "North-Carolina Farmer," vol. 4, p. 150, and, indeed, all the volumes of that work.

We urged, first, the establishment of a State Agricultural Society, and in the Farmer for Nov., 1848, we said, "let such members of the Legislature as feel an interest in the matter" meet with "the citizens who may be here from different sections of the State," "in the Capitol, and organize a State Agricultural Society." This we continued to urge, from year to year, until 1852, when our suggestion was adopted, and a meeting was held in this city, Maj. C. L. Hinton in the Chair, and Mr. Taylor of this place acting as Secretary, and the now existing Society was organized.

We urged, secondly, the establishment of county societies; and many were formed in the State. We contended, thirdly, that "an act in aid of their funds should be passed, to enable them to distribute encouraging and adequate premiums for important improvements;" and an act was passed at the session of '52-'53, giving each county society fifty dollars; and at the late session, the subjoined act, giving the State Society \$1,500 for the purposes indicated.

We recommended, fourthly, from time to time, that "provision should be made for a geological survey of the State." This has been done.

We recommended, fifthly, that, "by all means, a central railroad, be erected through the middle of the State, from the seaboard to the mountains." This "work now goes bravely on," and our ears are daily saluted with the soul-stirring whistle of its locomotives.

Sixthly. One of our recommendations only remains to be carried out, and that is, that "all docu-

ments emanating from the Agricultural Societies, of sufficient value, giving light to the people; the experience of the best practical farmers, and the lessons of the scientific, should be spread broadcast over the land at the *public expense*." This is done by some of the States with much advantage to the cause of improvement. We have before us, now, a letter addressed to us as Secretary of the State Society, from Jno. B. Dillon, Esq., Secretary of Indiana State Board of Agriculture; in which he states that "the Indiana Board of Agriculture" has, since its organization, published three volumes, comprising the transactions of the Board "for the years 1851, 1852, and 1853. These volumes have been printed for distribution among the county and district agricultural associations of this State [Indiana] and for carrying on a system of exchanges with States, in which similar organizations have published agricultural reports. This system has operated beneficially on the industrial interests among which it has been established." We regret that we have as yet no such system in North-Carolina. We have our "Literary Board," and our "Board of Internal Improvement," but our "Board of Agriculture" yet remains to be established. We hope the time is not distant when it will be brought into existence.

AN ACT to encourage Agriculture, and for other purposes.

Sec. 1. *Be it enacted by the General Assembly of the State of North-Carolina, and it is hereby enacted by the authority of the same,* That it shall be the duty of the Public Treasurer to pay to the Treasurer of the North Carolina Agricultural Society, on the first Monday of October, during each and every year, out of any moneys not otherwise appropriated, the sum of fifteen hundred dollars to be disposed of in the payment of premiums, as hereinafter directed: *Provided, however,* That the Treasurer of said Society shall first produce a certificate from the President thereof, showing that during the past twelve months the like sum has been raised by the said society for the same purposes.

Sec. 2. *Be it further enacted.* That the moneys hereby appropriated are to be applied, under the direction of said Society, to the payment of premiums upon agricultural productions, implements of husbandry, and domestic animals, and to such other purposes as may, in the judgment of said Society, be calculated to advance the interest of agriculture and manufactures.

[Ratified the 16th day of February, 1855.]

AN ACT for the protection of Sheep:


Sec. 1. *Be it enacted by the General Assembly of the State of North-Carolina, and it is hereby enacted by the authority of the same,* That upon complaint made by any owner of sheep, to a justice of the peace that such sheep have been killed or damaged by dogs, the said justice shall issue his warrant, directed to any lawful officer, commanding him to bring before said justice, within thirty days from the date of said warrant, the owner of said dog, or the master of any slave, or parent of any minor child, reputed to be the owner of said


dog; and the justice shall, at the same time and place, summons to appear three freeholders, who, together with himself, shall hear the testimony of both complainant and defendant; and if, upon such trial, the justice and a majority of the freeholders are satisfied that such damage has been done by the dog or dogs of said defendant, or by the dog of the servant or minor child of the defendant, the said justice shall render up judgment against said defendant in favor of the complainant, for a sum not exceeding twice the amount of the real damage sustained, and issue execution therefor.


Sec. 2. That the plaintiff or defendant, in any action brought under this act, shall have a right of appeal to the County or Superior Court of said County; and that upon such appeal, the trial in court shall in all respects be *de novo*; and the parties shall be permitted to plead, and the issues shall be made up as in actions of trespass.


Sec. 3. That the ignorance of the vicious habits or character of the dog shall be no defence in actions arising under this act.

Sec. 4. That this act shall be in force from and after its ratification. [Ratified 14th Feb. 1855.]

 The death of Nicholas, the Emperor of Russia, announced to have occurred from apoplexy on the 2d ult., leaves matters in a more uncertain and unsettled state in regard to the war. Peace would no doubt have a tendency to restore equilibrium and prosperity to all branches of business. Though it might depress one class of agricultural products, it would elevate another. The great staples of the South, cotton and tobacco, would be elevated. But the end is not yet. The successor of Nicholas, Alexander, may be as obstinate as he, and the war may continue to rage.

 Truly does "Winter linger in the lap of Spring." Thursday morning, the 22d March, the ground was covered an inch deep in snow, the first of the season here; and again on Tuesday morning the 27th, it snowed awhile "like blazes," as we heard a little urchin exclaim. We have had throughout, an extraordinary winter and spring. It has been uniformly and unusually cold and dry, with the exception of a heavy rain or two last month. It is predicted, that the backwardness of the spring, which appears to be nearly a month later than in ordinary seasons, will insure a good fruit year.

 We regret to learn that Gilbert, a blacksmith belonging to Capt. Ransom Pool, of this county, was killed on the Central Railroad, a few days ago. Being deaf, he could not hear the whistle, and the cars, which could not be stopped in time, ran over and crushed him to death.

 If ANY MAN OR SET OF MEN IN NORTH-CAROLINA will publish a more instructive, useful, entertaining monthly, and one possessing more typographical neatness and correctness than we (the humble editor of the *North-Carolina Arator*—and we say it without boasting—) are going to *TRY* to publish, let the agricultural public, and the society, patronize it;—if not, then we say—patronize with pen, plow, spade, shovel, tongs and anvil, and good-will, and a DOLLAR, yearly, added thereto, the efforts now making to sustain the NORTH-CAROLINA ARATOR.

CONTENTS OF THIS NUMBER:

To the Farmers & Mechanics of N. C.,	1	Walking on the Sea,	16
Rotation of Crops,	3	American Wool,	16
Work for April,	5	Anecdotes,	16
State Agricultural Society,	8	Proceedings State Agricultural Society,	17
The Mineral Manure Theory,	9	Grass for Pasture,	23
Cochineal,	10	Antidote to Potatoes Disease,	23
To make Mutton Suet Candles,	10	Curiosities of Nature,	24
Turkey Story,	10	Burns,	24
The Largest Mill,	10	Preserving Flour and Meal,	24
Imported Jersey or Alderney Stock,	10	To the Reader,	25
Do. Do.	26	Our Frontispiece,	25
Mechanics—Communication of B.,	14	To our Mechanics,	25
Panola—Communication of Mr. Dancy,	14	Arator-Plowman,	26
Agriculture,	15	Early Cucumbers,	26
Railways,	16	Productive Farm,	27
Items,	30	Manufacture of Boots and Shoes,	27
		Mr. Cameron's Address,	28
		Legislative Aid,	29

MARKETS.

RALEIGH.—Corn, 85 @ 90; Bacon Hams, 10½ @ 11; Hog round, 9½ @ 10; Flour, 7½ @ 8½; Meal, 90 @ \$1; Fodder, \$1 10 @ \$1 25; Oats, clean, 50 @ 60; Butter, 25; Lard, 10 @ 11.

Flour is in demand, and would meet with ready sale.

FAYETTEVILLE.—Corn, \$1 @ \$1 10; Bacon, 9 @ 10; Cotton, 7½ @ 8½; Flour 8 @ 8½.

WILMINGTON.—Bacon, 0; Cotton, 8½ @ 8¾; Turpentine, yellow dip, \$2 60, Hard, \$1 60; Spirits, 40c.

NORFOLK.—Bacon, hams, 11 @ 12, hog round 7½ @ 10; Cotton 8 @ 8½; Flour, 9½ @ 10½; Spirits Turpentine, 45 @ 46.

PETERSBURG.—Bacon, western sides and shoulders, 7 @ 8½; Cotton, 8 @ 8½; Corn, 83 @ 85; Flour, 9 @ 12*; Tobacco, lugs, 4½ @ 6½; leaf, 6½ @ 12; Wheat, \$1 30 @ \$2 20; Mexican Guano, \$35; Peruvian ditto, \$50.

* This quality Flour is manufactured at the city mills, and is considered a very superior quality of Family Flour, which accounts for its extra high price. The prices are regulated by the grades "midling," "fine," "superfine," "extra," and "family flour." It is a rare thing that any, except "city mill" flour, ever reaches the grade of best "family."

A. M. MCPHEETERS, H. GHISELIN. J. W. MARTIN.

A. M. MCPHEETERS & CO.,

WHOLESALE GROCERS,

Forwarding and Commission Merchants,

6 ROANOKE SQUARE,

NORFOLK, VA.

REFERENCES.

Thomas P. Devereux, Halifax, N. C.

G. W. Mordecai, Pres. Bank of the State of N. C.

C. Dewey, Cashier do do do

W. H. Jones do Branch do Cape-Fear, Raleigh.

L. O'B. Branch, President R. & G. R. R.

Messrs. Reid & Soutter,

Dr. N. Whitehead,

President Farmer's B'k of Va.

Alex. Bell, Esq.

Messrs. Spence & Reid, Baltimore.

B. Blazson & Son, New York.

M'GEE & WILLIAMS,

At their new store, No. 10 Fayetteville street, most respectfully ask an examination of their **RICH AND ELEGANT STOCK OF SPRING AND SUMMER GOODS**, which having been bought for cash, they are enabled to offer such inducements to purchasers as will make it greatly to their advantage to call and look before purchasing elsewhere.

Our stock is entirely new, and selected from the latest importations in New York, consisting in part OF VERY RICH PLAID, STRIPED AND SOLID DRESS SILKS,

Heavy Black Gro De Rhine and
FIGURED SILKS;

Plaid Foulard and India Silks,

Striped Percals, Plaid Hearnais,

Solid and Plaid Berages,

Moire Antique and Plain Challies,

Printed Linen Cambrics,

Grenadines and French Organdies,

Barege, Volante and Jackonet Robes,

Brilliantes, Lawns, Gighams,

Prints, Challie Delaines, Alpacas,

Crape De Paris and Bombazines,

French and Scotch Embroideries.

Honiton, Maltese and English

Thread Edging,

Bonnet, Taffeta and Trimming,

RIBBONS,

Jackonet and Swiss Muslin Bands,

Cambric Flouncings.

White Dotted and Figured Swiss Muslins,

A large assortment of **HOSIERY and GLOVES** of the most approved make; together with a **LARGE STOCK OF STAPLE AMERICAN AND BRITISH GOODS**. All of which will be sold at the lowest possible prices.

Raleigh, March 24th, 1855.

1tf.

North Carolina Six Per Cent State Stock.

TREASURY DEPARTMENT, }

Raleigh, N. C. March 12, 1855. }

SEALED Proposals will be received at this Office, until 10 o'clock, A. M. of the 14th April next, for the purchase of One Million of Dollars in Bonds running thirty years. These bonds are issued by the State of North Carolina, for the completion of the North Carolina Railroad. And in addition to the faith of the State, all the Stock held by the State in said Road, and the dividends arising from said Stock, are pledged for their redemption.

They are by express enactment exempted from taxation for any purpose. They will bear date the 1st of April, 1855, and will have coupons attached for the interest at six per cent. per annum, payable the first days of April and October, in each year.—Both interest and principal will be payable at the Bank of the Republic in the city of New York, unless where the purchaser prefers to have them payable at the Treasury of North Carolinia.

They will be issued in sums of one thousand dollars each.

Parties bidding will please address their letters endorsed, "Proposals for North Carolina Stock," to the undersigned at Raleigh, N. C. They will also state at what point, and in what kind of funds they propose to pay.

The bids will be opened at 10 o'clock, A. M., of

the 14th April next, in the presence of the Governor, the Secretary and Comptroller of State, and of G. W. Mordecai, President of the Bank of the State of North-Carolina.

The undersigned reserves the right of accepting such bids in the whole, or in part, as may be deemed most advantageous to the State. Successful bidders will be required, as soon as informed of the acceptance of their bids, to deposit in the Bank the amount of their bids, with the accrued interest from the first of April, 1855, to the credit of the Treasurer of the State of North Carolina.—This deposit may be made in the Bank of the Republic, New York; the Bank of the State of North Carolina, or the Bank of Cape Fear, Raleigh.

Documents showing the resources of the State and the amount of indebtedness may be had at this office, or on application to Messrs. Brown, and De-Rosset, city of New York.

D. W. COURTS.

Public Treasurer of N. C.

1-tf.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,

VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,

French, English and American Perfumery,

Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,

SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

W. L. POMEROY,

PUBLISHER,

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

New Arrivals! Spring & Summer Goods.

For 1855.

T. R. FENTRESS hereby tenders his sincere acknowledgments for the very liberal support heretofore given him by his patrons and friends in the City of Raleigh & vicinity, and the citizens of the State generally, who have favoured him with a call, and hopes to merit & receive a continuance of those same favours, by prompt attention to the wants of those who may require his services. He may always be found at No. 15 Fayetteville Street, RALEIGH, N. C., where he is prepared to furnish any and every article of Gentlemen's wearing apparel, at a reasonable notice, made up *in his own establishment*, in the most approved style.

He respectfully calls the attention of all, to his stock of **SPRING & SUMMER GOODS**, which are just being received from N. York, and which are as fine and durable as can be bought in that place, and will be sold at such an advance on cost as will suit the times and enable all who wish to *encourage home manufactures*, and get really good clothing, an opportunity to do so, and not to be deceived by *Northern ready made Clothing* as they can purchase on as good terms and a more lasting articles, for the same money.

He has also a stock of **READY MADE CLOTHING**, which he is desirous of closing up, and will sell at a small advance above cost. Call if you want cheap Clothing.

Paris and American fashions for Spring and Summer of '55 just received.

All persons indebted to the subscriber, will please call and settle by Cash or Note, as his last six months business falls due the first day of April, 1855, and the accounts bear interest from each term.

Register, Standard, and Spirit of the Age insert 4 times.

T. R. F.

1-tf.

Eureka! Eureka!—I Have Found It!

THE Subscriber begs leave to announce, that having constructed an **APARATUS WHICH MAGNIFIES A DAGUERREOTYPE TO A FULL LIFE SIZE PORTRAIT**, and reflects **THE SAME UPON THE CANVASS**, I am enabled to paint a **PERFECT LIKENESS** in about half the time it has heretofore required, and that, too, from only two or three short sittings. With this advantage, I can afford to paint **PORTRAITS** for a much less price than hitherto, and have accordingly reduced my charges to

\$25 for Life Size Portraits;

\$15 for Half Size;

\$10 for Small Heads.

With this assurance on my part, I flatter myself that a generous public will continue to bestow a liberal patronage.

Persons wishing Portraits from Daguerreotypes, have only to see my present mode of copying them, to be convinced that a perfect copy can be made.

The subscriber will visit the country, if desired to do so, for the purpose of painting families.

O. P. COPELAND.

Raleigh, March, 1855.

1—1f

A T S. H. YOUNG'S, No. 24, FAYETTEVILLE STREET, may be found a choice lot of **SPRING AND SUMMER GOODS** for Ladies and Gentlemen's wear.

Also, prime Molasses, Rice, Sugars, Coffee, &c. All will be sold at low prices. Call and see.

Raleigh, March 26, 1855.

1-tf.

Star and Spirit of the Age copy.

E. L. HARDING.**Clothing and Furnishing Goods.**

NOW RECEIVING a large and desirable stock of **SPRING AND SUMMER CLOTHING**, with a well selected stock of Gents. **FURNISHING ARTICLES**. Our facilities for *buying cheap*, and having our goods made up under our own eye, makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2t

NORTH-CAROLINA JEWELRY STORE.

A large and general assortment of Watches and Jewelry of every description, will be found at the North-Carolina Jewelry Store, on Fayetteville Street, Raleigh, two doors south from Mr. Turner's Book-Store. The subscribers call special attention to their fine lot of the **REAL Church Street Joseph Johnson Gold Hunting case, 19 Jewelled Watches**—decidedly the best Watch made.

ALSO—The latest style of Cameo and other Breastpins, Ear Rings, &c.,

PALMER & RAMSAY.

Raleigh, April 2, 1855.

1-3t.

Office of the Neuse Manufacturing Co.,

RALEIGH, N. C. }

H. W. HUSTED, Pres't; E. B. FREEMAN, Treasurer.

THIS COMPANY will pay **CASH** for all Cotton and Linen **RAGS** delivered at their Paper Mills at **MILBURNIE**, six miles N. E. from Raleigh. The Planters of the country are urged to have the Rags, now wasting on their plantations, saved and sold. It will add much to the comforts of their slaves; and will cost but little care. **Wewant 700,000 lbs. per annum.**

1-tf.



THE

"ADAMS EXPRESS COMPANY."

MERCHANTS and others having Goods to ship, will find it greatly to their advantage to consign them to the care of this Company. The well known responsibility of the Company is a sufficient guarantee against all losses. Having obtained unlimited privileges over all roads connecting this with the Northern Cities, patrons may rest assured of having their Goods transported at mail speed.

Notes, Bills, Drafts, etc., etc. collected, and remittances promptly made at all places where the Company has Agencies.

J. B. EZELL, Agent.

Raleigh.

Office FAYETTEVILLE ST.

1-tf.

JOB PRINTING.

The Editor of The Arator is prepared to execute Job and Book printing in handsome style, and will be thankful for that kind of patronage.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, MAY, 1855.

NO. II.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, in advance, or \$1.50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines, for each and every insertion, one dollar—containing more, at the same rates.

"FARMING A SCIENCE."

It will be seen by a perusal of the following article from "The North-Carolina Farmer" of 1845 that we then earnestly endeavored to impress upon our farmers the importance of making themselves acquainted with the science of their art; the necessity of which was obvious from the disastrous effects of the blind and reckless system of culture which prevailed among them. A happy change has been wrought in the public mind since that day. The spirit of improvement has been aroused, and is now at work all over the State. Much, in some portions of it, has been accomplished; and we have reason to hope the work will be general and thorough. Every one is beginning to inquire what can be done to increase the products of his farm; every one is seeking to learn the experience of the skilful, the successful and the thrifty; every one is beginning to see that judicious agricultural papers, collecting and publishing what is solid & good in both theory & practice, are important and useful mediums of furnishing the information they desire; those who never read before are beginning to read, digest, and practice systematically what they learn; and every one that

thus reads finds in reading pleasure and profit that he never dreamed of before. But there is something yet lacking. Our farmers must mingle with each other more; there must be a more frequent interchange of opinions and sentiments among them; there must be concert and energy in their operations; and these things cannot be brought about without organization. County Clubs must be formed: to be interesting and profitable they must meet often; the members must be punctual in attending; they must relate their experience, discuss such measures as relate to their interest, and excite each other to labor to excel in all things connected with their pursuits: Let, then, the old county Societies which may have gone down, be revived; let new ones be established; let those who feel an interest in the cause, exert themselves every wherein *getting up* and *KEEPING UP* well organized societies in every county. Let them urge the importance of reading agricultural periodicals, of adopting agricultural improvements, and contributing something at every Fair to encourage and help forward the good work.

The following is the extract from the "The North-Carolina Farmer" referred to above.

Farming has been reduced to a science, and no one now, who has the ability to read and disposition to study, need go blindly to work in making experiments or improvements on his farm. Among those who do wisely avail themselves of its lights, the work of improvement is rapidly advancing; and none are lagging behind amidst scenes

of fruitless toil, want and desolation, but those who will not read—the wilfully ignorant and blind.

That the latter is a numerous class in North-Carolina is a fact which we deeply deplore. If any one doubt it, let him but cast an eye on the agricultural practice and prospects which will meet his glance in almost every county and district in the State. He will see farm after farm, embracing thousands of acres, "which exhibit a degree of unproductiveness not natural to the soil; which have been over-cropped, and worn out, and impoverished. A soil comparatively fertile by nature has been rendered infertile by art. That which was naturally good has been rendered as unproductive and unprofitable as that which was naturally bad. Has this state of things arisen from ignorance, from design, from necessity? By whichever of these it has been immediately caused, it is clear that the requisite degree of knowledge on the part of the owners of the soil would have retarded if not wholly prevented it." But we rejoice that the means of resuscitation are within their reach. A masterspirit informs them that "the same knowledge will enable them to reclaim these lands again, and gradually restore them to a more fertile condition." The same author says, "the art of culture indeed is almost entirely a chemical art, since nearly all its processes are to be explained only on chemical principles. If you add lime or gypsum to your land, you introduce new chemical agents. If you irrigate your meadows, you must demand a reason from the chemist for the abundant growth of grass which follows. Do you find animal manure powerful in its action, is the effect of some permanent, while that of others is speedily exhausted? does a mixture of animal and vegetable manure prepare the land best for certain kinds of grain? do you employ common salt, or gypsum, or saltpetre, or nitrate of soda, with advantage?—In all these cases you observe chemical results which you would be able to control and modify did you possess the requisite knowledge." The greatest light has been thrown upon the art of culture by the researches of organic chemistry. "Every day too is adding to the number and value of its discoveries," and the agriculturist should endeavor to keep pace with the advances of this department of science.

Even the most inveterate anti-book farmer must become convinced, by examining the subject, that farming is a science, requiring study as well as labor. He will see from the facts already stated, that it will teach him the true nature and constituents of the soil, how he may ascertain the sub-

stances of which plants are composed, what kind of manures best suit certain soils and crops, the best compositions to restore worn out lands and to enrich those that are naturally poor. And, moreover, he will learn from it that all organic matter, or vegetable and animal substances, are composed chiefly of four elements, carbon, oxygen, hydrogen & nitrogen; that altho three of these, in a natural state, are aeriform, and cannot be perceived by the senses, yet, in proper combinations, they form the principal part of the solid matter of our own bodies and of those which support them—"constitute those various forms of vegetable matter which it is the aim and end of the art of culture to raise with rapidity, with certainty, and in abundance. How difficult to understand the intricate process by which nature works up these raw materials into her many beautiful productions—yet how interesting it must be to know her ways, how useful even partially to find them out!" It shows how every farmer can procure these combinations and apply them to the *certain* improvement of his land, & increase of his various crops. Even the manner of cultivating the soil is now conducted upon strictly scientific principles, with surprising success. Therefore, all who have the ability ought to make themselves thoroughly acquainted with this science; and those who have it not, should at least familiarize themselves with the important discoveries and interesting results by which it is daily throwing new lights upon the art of culture.

"HOW TO READ TO PROFIT!"

What we said in "the North-Carolina Farmer," in 1845, relative to reading to profit and the importance of organizing agricultural Societies in every county of the State, we here repeat in the same language. It will be seen that we were *then* fully up to the zealous spirit of improvement which we are gratified to perceive is *now* spreading among the people of North-Carolina generally.

The farmer who would improve by reading—who would read to purpose—must also work! work! What he learns, he must practice! practice! practice! Let every one do this, and the advantages of *book* farming will soon be seen and acknowledged by all, even in North-Carolina, where we are so far behind the age in perceiving and seizing these advantages. It should ever be borne in mind that knowledge is nothing unless it is practiced—that nothing great in agriculture can be achieved without application, industry, toil, energy and perseverance. These virtues, in time, are invincible, conquer all obstacles, and accomplish every thing.

And our great work can be greatly advanced by associated efforts. Let the farmers, therefore, organize agricultural Societies in every county without delay! Let the united knowledge and experience of all the cultivators of the soil be brought to bear upon the work of improvement! Let every one catch the spirit of emulation, and strive to rise to the highest pitch of perfection in his honorable and delightful pursuit! and the object will be accomplished as certainly as the fact that day follows night!

A LITTLE FARM WELL TILLED.

A friend having called our attention to the importance of impressing upon the minds of our farmers the necessity of cultivating less land and manuring and working it better, we present the following extract from Mr. Sleeper's Address, as well calculated to convince them of the importance of thorough culture.

The greatest obstacle to the improvement of Agriculture is the propensity of the farmer, the *mania* I might well call it, *to own more land than he can till to advantage*. And it is thus that we see scattered over the country large tracts of sterile, unproductive land, which under good cultivation, would yield bountiful and valuable crops. Not only the dictates of sound philosophy, but numerous facts, drawn from experience, are constantly and loudly calling upon the farmer, from every quarter, to *occupy a small farm and cultivate it well*. I wish that this admonition could be thundered into the ears of the agricultural population of the country, until a complete revolution should be produced in the farming system.

This great truth is already beginning to be understood in other countries, and is attended with corresponding advantages. The densest population of Europe may be found in Flanders and Lombardy, where the land is divided into small farms, and being thoroughly tilled, produces abundant food for the inhabitants. And the experience of a quarter of a century in France, proves that, by the occupation of the country under small working farmers, the land is producing one third more food, and supporting a population one third greater, than when it was possessed in large masses.

The law is universal—it applies to every country—that the secret of agriculture consists in the thorough cultivation of a small piece of ground, which, well manured and well worked, yields up its treasures in prodigal profusion. In almost every part of our country, one capital error runs through the whole system of farming. *A great deal of money is invested in land, and a very little*

money employed in its cultivation. And it is sad to see the owner of a large farm pride himself on the number of acres which he possesses, and undertake to cultivate the soil without sufficient means. Such a man has been happily compared to a merchant, who expends all his capital in building for his own use a large roomy store, and is afterward seen gazing with complacency on his bare walls and empty shelves.

He has chalked out to himself a hard lot, and voluntarily enters on a state of servitude, worse than Egyptian bondage. His work is never accomplished. He toils at all hours and yet is never ahead of his work, and this work is never half done. He has not time to accomplish any thing thoroughly. His house is out of repair—his barn dilapidated—his cattle poor—his fences in ruins—his pastures overrun with bushes, and acres of land, which, under proper cultivation, might be made to yield a rich harvest, are but little removed from barrenness, perhaps dotted with mullein, burdocks, thistles, or filled with sorrel, white weed, and other noxious plants, which root out the grass and eat up the life of soil, without affording nourishment to man or beast.

What a harrassed, unhappy being must be the owner of such a farm! He has no time for recreation or mental improvement. He is doomed to the tread-mill for life; with his spirits depressed—despondency stamped upon his haggard lineaments, and the worm of discontent gnawing at his heart, with him there are no pleasant associations with the *past*—the *present* is full of anxiety, care, and hard labor and a dark cloud rests upon the *future*. He reminds me of Hood's touching "Song of the Shirt," and it may be well said or sung of him,

Work—work—work!

From weary chime to chime,

Work—work—work!

As prisoners work for crime—

Plow, and harrow, and hoe!

Hoe, and harrow and plow!

Till the heart is sick and the arm benumb'd,

And misery stamp'd on the brow.

Such a man has little reason to pride himself on his extensive possessions; and paradoxical as it may appear, he would in nine cases out of ten, add to his riches as well as his enjoyment, by giving away one half of them at least. He is, in the true sense of the word, miserably poor, in fact a slave; and when his eyes are opened to his real condition, it is no wonder that he is glad to emancipate himself by selling his farm for what he can get, & escape, post haste, to Texas or Iowa.

AN ADDRESS BY PAUL C. CAMERON, Esq.

We call the special attention of our readers to the following extracts from the Address of Mr. Cameron, delivered before the "Orange County Society for the promotion of Agriculture, the Mechanic Arts, and Manufactures." We regret that we cannot give this able, learned and practical Address without abridgement. Not a word of it should be lost, and all who read it will concur in this opinion.

Causes of Zeal and Energy.

Having handsomely introduced his subject, he proceeds to speak of the causes which should now stimulate us to zeal and energy in the work of improvement as follows:

"No one man—no one generation of men can repair the miscarriages of the past. And it will require years of patient and intelligent industry to bring us up to what we should wish to accomplish for ourselves, and for those who are to come after us. But there are causes, now more manifest than ever, to stimulate us with more manly energy, and to fire us with a new-born zeal.

"We commence our work on a distressingly exhausted field; if not, in the language of the Psalmist, on "a barren and dry land," yet on one that requires all our care to restore it to its native beauty and fertility. And how we shall best accomplish it, and most speedily improve our husbandry, are important considerations to us all, but especially those of us who, as heads of families and freeholders, intend to make this our abiding place.

"Our inland position, and the absence of every thing like a stimulating HOME MARKET, may be regarded as the chief causes of our depressed agricultural condition—the fruitful source of many of the ills, as heretofore exhibited, in the want of a liberal public spirit, and that careless indifference, nerveless energy and sleepy ignorance that have marked the enterprises of our people, public and private. But the up-heaved earth for more than 200 miles, through the centre of the State, assures us that if we be true to ourselves, the day of our deliverance from commercial and agricultural bondage is at hand. The State after years of continuous delay and debate, has affixed her seal to this deliverance; and yonder great work is a fixed fact in the future history of North-Carolina; and its blessings, like the rains and dews of heaven, will fall with equal favor and kindness on the manly and the mean—the liberal and the illiberal—the thankful and the unthankful. But it will be in vain that millions shall be expended for the

construction of Rail-Ways, and easy and cheap communication be opened to commercial marts and shipping ports, if our agricultural and mechanic arts be not directed and sustained with more intelligence, liberality, industry and zeal, by your population. The Plough, the great sword of civilization, must be driven by a stronger will, and a deeper furrow still be lifted to the influences of the upper day. The Spade must reclaim the valley and branch land—now not unfrequently the source of disease and death—and drive out the frog and water rat from their hiding places.—The Farmer must become an educated, a reading and a thinking man. He must not remain like the beaver in the construction of his burrow, the mere and satisfied copyist of his fathers. He must listen with a teachable spirit to the suggestions of science. He must believe that *mind* as well as muscle, is essential to the successful tillage of his soil. He must learn to regard the earth as a great treasure house of beauty and abundance, but that it requires constant additions and new supplies to prevent exhaustion—that the earth is a willing receiver as well as a liberal giver.

"The great incentive to all improvement and efforts in the application of human labor, is *profit*. It is dollars and cents that quickens all human invention—stimulates all human enterprise. It is for these representatives of value, that the mariner braves the dangers of every sea and latitude and the miner traces amid the dangers of fire-damp and death, threads of gold and silver to the earth's centre.

"As civilization has advanced, human wants have increased; and to supply this demand, all the powers of the human mind have been taxed to the utmost, making all the elements of the natural world subservient to its necessities and purposes. And by associated wealth and numbers, wonders have been accomplished, erecting and dedicating temples to industry and the arts. The anvil has been made to ring in such loud and continued peals, as to induce the sons of Vulcan to think that the thunders of their hammers are hardly surpassed by the explosions of the natural world; the merry spindle, and the yet more merry shuttle, to dance in cotillions, not of hundreds but of tens of hundreds; exhibiting to all classes the beauty and harmony of all interests—that the loom and anvil do best surrounded by well directed ploughs and harrows, and that the distributions of the wealthy and adventurous furnish with most certainty and liberality, the daily food of the poor.

"Here at the South, and especially in North-Carolina, we know as yet but little of the power and influence of associated wealth and numbers, in the advancement of the industrial and utilitarian arts. It is this, coupled with the intelligence, industry, and inventive powers of the people, that has covered the bleak hills of New England with swarming villages, teeming work shops, and public schools—stimulating its agriculture, and maintaining a constantly ascending scale in the value of labor and property.

Things essential to all pursuits.

The following could not be better said, and cannot be too strongly impressed upon the minds of our farmers and mechanics :

"Self-respect, and a certain degree of intelligent enthusiasm, are essential to all the pursuits of life. To none is it more important than to the Farmer and the Mechanic. They best honor themselves by honoring their calling. They must pride themselves in their plain & homely duties ; they must know that their daily work is accomplished with the best intelligence and an earnest wish to attain the highest standard of excellence ; that the products of their fields, work shops, mills, looms, and dairies shall not be surpassed, so far as their efforts are not controlled by the laws of nature.—They must fit themselves to be the equals of any —acknowledge no superiority but such as is every where yielded to virtue, merit, and a well spent life."

A satisfied People.

A people falsely satisfied with their condition, the speaker contends, "will accomplish but little," & he justly urges that a reasonable desire to improve and advance, chastened by moderation and virtuous principle, is necessary to incite to labor, and cheerful labor is necessary to success and happiness.

The Age of Gold.

The extraordinary rage for gold of the present age, is sharply rebuked ; but North-Carolina is justly commended for her moderation and "high conservative principle." "Here on this soil no fanaticism can live, whether planted by commercial, political or religious madmen." True to the letter.

Agriculture the safest and best Pursuit.

The unsoundness of public opinion, that the rewards of agriculture are stunted and manual labor is degrading, is exposed and scouted in a manly and masterly manner. The speaker makes a home thrust when he says :

***** "Agriculture has no rewards for

"Those who hang about in lazy bands,
Through tippling shops and tavern stands."

But to the frugal, cheerful and conscientious son of toil, it not only extends her horn of plenty, but promises the best guarantees against the mortifications and temptations of life."

Other Pursuits.

These are justly commended. Invidious distinctions, jealousies and envies are deprecated ; and with pride, representatives from each and all are claimed as members of the Agricultural Society. He says beautifully and truthfully :

"The temple of human industry is sustained by many pillars, 'and they stand together like pillars in a cluster, the largest in the centre, and that largest is Agriculture.' It is enough for us to know that we feed all, and indirectly clothe all. Ours is the pursuit of the many ; we seek to awaken, to elevate, and to enrich the masses.—Ours is the pursuit of peace ; we are the children of peace—the worshippers of Ceres and Pomona, —and we seek to fill their courts with the triumphant and thankful songs of peaceful conquerors and creators."

Little Things.

Speaking of the noble aims and ends of the pursuit of agriculture, Mr. Cameron teaches the following important lesson, which should ever be borne in mind :

"But noble as it is, it is a life of little things ; and in nothing is petty cares so fully rewarded by the force and grandeur of its aggregates. It is by little grains, to be multiplied by our care, that mills and barns are filled ; it is by the repeated strokes of the scythe that we build majestic ricks of hay ; it is by little particles of oil that we collect pounds of delicious butter ; it is from little strands of hair, finer than those of our own heads, that we obtain velvet cloths and tufted carpets ; it is from little bolls of cotton that we gather the millions of pounds, equal in American commerce to one hundred millions in value—furnishing many a man on both continents with four shirts, who without it would hardly have one, equalizing the exchanges of commerce, exacting from the men on change and in bank parlors, both in Europe and America, the confession that *Cotton is King*—and making England to feel that, mistress as she claims to be of the seas, she must keep the peace with us ; that, by withholding a single crop of cotton, we can prostrate her manufacturing cities," &c.

"As a farmer, trained to my duties alike by interest and inclination, I urge you to look well to little things ; to treasure, garner, and keep little things ; especially that you do not forget the little lessons taught you in your daily toils. And

remember that no class has been so frequently taught that it is a great error to ascribe great consequences to great causes. It is not the tempest that destroys the lofty oak, but the insect at the root; it is not the flood or the earthquake that desolates our fields of wheat and cotton, but the fatal rust, the insignificant worm, and the greedy grasshopper."

A Picture of Orange.

A graphic description is given of the worn out fields, dilapidated buildings, scanty productions, &c., which Mr. C. justly remarks, "is but too true of many other counties of North-Carolina." "What people," adds he, "more in need of the stimulating influence of Agricultural Societies and Journals, and a new-born zeal for industry, and a more elevated spirit of intelligent enterprise?"

Edgecombe Farming.

Mr. Cameron pays the following just tribute to the pioneer county of Edgecombe—honor to her noble sons!

"Edgecombe is reputed the best cultivated district in the State. It is said her farmers are the freest from debt, the largest money lenders, paying the most liberal prices for lands, slaves and manures, and that every thing in her borders is advancing in solid value and improvement. Less noise at elections, and more rivalry in the field, and more and better provision for ourselves and dependents, will certainly bring us better crops, and elevate our social and domestic habits."

Self-Improvement.

The importance and methods of self-improvement, are shown with great force and eloquence by the speaker. He urges associated effort, study and reflection as well as action. Let those who complain of want of time mark the following:

"We have opportunities for study in our every day employment—in every tree, plant, and insect—in every crumbling stone and decaying leaf—in every change of the atmosphere—in the clouds above us, and in the earth beneath us—in short, in every natural object or appearance by which we are surrounded. It is by the practice of thinking and investigating, of taking notice of what occurs around us, and trying to ascertain the causes of such phenomena and effects, as they come under our observation, that the mind is rendered active and stored with really useful knowledge. From such observations and investigations, society has received its best contributions. Strolling on the borders of a cotton field in South-Carolina, Whit-

ney, with a metallic point in his hand, applied it to the removal of the lint from the seed. At once the thought of multiplying the points was presented, and hence the Cotton Gin. At the tail of a kite, Franklin, a Boston printer's boy, mastered the laws of Electricity, and obtained the control of the Lightning; hence the Rod and the Telegraph. And Fulton and Watt, watching the action of boiling water, conceived the Steam Engine; and yoking the discordant elements of fire and flood, gave us the Ocean Steamer and the Iron Horse, annihilating time and space. And, seated on his impoverished and wasted farm at Shell Banks, the unpretending author of the "Essay on Calcareous Manures," stimulated by necessity, and directed by an active and inquisitive mind, commenced a series of experiments in the use of Shell Marl, that have, in the opinion of the best informed, added not less than thirty millions to the value of the lands of tide-water Virginia; placing his State, in less than twenty years, in the front rank of the wheat producing States of the Union; and winning for himself a reputation more extensive and enduring than any of Virginia's living statesmen, and is now regarded by all as her best living benefactor. With the farmers of Eastern Virginia, the fame of Edmund Ruffin "has attained its full height and proportion, and no man's praise can add a single cubit to his stature."

Education of the Heart.

This is urged by the able author of this address, as the highest importance to the farmer, in connection with the education of his head and his hands. Intemperance especially is reprobated in the following nervous language:

"Though no soldier in the cold water army—though no advocate for prohibitory laws—yet I should feel that I had failed in my duty to the plough, and the objects of this association, did I not declare, in the most emphatic manner, that, next to a wasted and exhausted soil, the greatest evil which afflicts my native county, disfigures its husbandry, & degrades its tillers, is the manufacture & intemperate use of a cheap & intoxicating drink. For proof of this, visit any neighborhood in the county, and where most whiskey is used, there will you find tillage and tiller in the most naked and ragged condition; the social duties and affections most disregarded; humanity in its worst estate; and the brute but the shadow of his master in the exhibition of the pig without corn, and the cow without fodder."

Self-made Farmers.

On this subject, he says:

"In North-Carolina, few and wide apart, we find

some self-made farmers, engaged with all their hearts and minds in the cultivation and improvement of the soil, standing up like our own Pilot Mountain, as if to show the width of the plain at its base, or like light houses on a long line of sea-coast dispelling the darkness that surrounds them; and if not teaching like masters in their art, yet exhibiting the fullest proof that on our soil and under our elime, the best objects of human labor are to be realized and enjoyed. I regard it as neither indelicate or improper, on an occasion of this sort, to name publicly such planters, farmers and millers as Thomas McGehee, of Person, and William Holt, of Davidson. And I should be gratified did my acquaintance with the State permit me to name a long list of such husbandmen."

Agricultural Reading.

Mr. C. states the remarkable fact that on the original subscription list for the publication of "Coleman's Practical Agriculture and Rural Economy," this State furnished but a single subscriber! and that the Chief Engineer of the North-Carolina Railroad, in his first report, announced that, at the farm of *that subscriber* he found the best specimen of scientific and successful husbandry along the entire line of Railroad; and that at our first and second State Fairs the herd of young cattle exhibited by this reading and pains-taking husbandman, was regarded as the most striking feature of each exhibition." Speaking of the advantages of knowledge thus acquired, he remarks,

"In such toil the trained intellect exhibits it self like steam power,—a labor saving principle, capable of saving or performing a vast amount of labor. If required to sum up the whole duty of a farmer in three words, I would say, make your lands *clean, dry, and rich*; these are terms plain to the understandings of all, and each might well furnish a topic for an agricultural address.

"The first duty of a husbandman is to make himself acquainted with the character and constituents of his soil. No intelligent physician will prescribe for a patient until he has made what he calls a diagnosis of the case, that is, made himself acquainted with the malady, and then sets himself to the remedy. This is not the occasion, or I the person, to enforce the importance of obtaining aid and direction from an agricultural chemist. The natural sciences are now prosecuted with singular advantage and success, and that of chemistry has in a measure been created within the last half-century, and promises to render the most essential aid to agriculture."

Adaptation of Soils to Crops.

Lime, he is sure, is essential to the fertility of soils; and some land, he thinks, never can be improved, "until by the use of lime or some other corrective, its acids are neutralized, and the capacity to appropriate, or combine with putrescent manures, is imparted to the soil."

The following remarks relative to the classification of soils, merit particular attention:

"For all practical purposes, soils are classed under five heads,—sandy, clay, calcareous, peaty and loamy. We have chiefly to do with two. Our county is nearly equally divided by two large bodies of land, sandy and clay soils,—sight and touch teach us this,—varying in texture, surface, and supply of moisture."****

"The best lands of the county, in both classes of soil, have long ago been brought under the plough. Our fathers had quite as good an eye to the fat spots as any of their descendants; and you will find that the capacity of any of our soils to be enriched by putrescent manures, is in proportion to its natural or original fertility. In both districts let us devote our manures to the improvement of the naturally good lands, no matter how washed and exhausted, and leave the poorer lands for the supply of timber, now every day being enhanced in value."

On protection against drought and improvement of Soils, the following highly interesting and valuable practical information is given in this able address, which we commend to the most careful consideration of the readers of the ARATOR:

"As practice is worth all theory, I am able to declare that the best protection against extreme wet or drought, on either sandy or clay soils, is deep and thorough drainage by ditching, and deep and thorough tillage, by ploughing and subsoiling. The midland counties of North-Carolina seem to be the home of drought, or at least suffer as much from it as any portion of the country; which, I suppose, is to be accounted for from the fact that it is so far removed from the controlling influences of the mountain, and the evaporating surface of the ocean, its bogs and inlets. In connection with deep tillage as a protection against drought, and undertaken chiefly with a view to sustain the products of a kitchen-garden, I trenched with a spade three acres, three feet deep, with most satisfactory results. But I did not disregard the teachings of nature; her laws are not to be rashly disregarded; I did not venture to reverse her order in laying down the strata of my soil. I put the clay where I found it, at the bottom, and the sandy loam at top. The clay soils of Orange are more in need and more greedy of ma-

nures than the sandy soils, and like the unsatisfied miser will continue to take a little more. The clay soils will take to advantage long and unfertilized manures; if it is not idle, it is at least a great waste to apply such manures to sandy soils. In sandy soils decomposition is slow, never perfect—suffers alike by filtration and evaporation. Of all the manures that I have used on sandy soils, no one has so uniformly responded to my wishes as wood ashes, leached and unleached. They contain both clay and lime, assist sandy soils to retain moisture, correct acidity and furnish lime. * * * *

"Many of the subsoils are very parti-colored, and the more they are so, and the higher the colors they maintain, the more injurious are they to the surface above them. The best is the brown, the worst is blue and white. Since the days of Lord Coke, the lawyers have taught us that he who possessed the surface had and held all above it—" *Cujus est solum, ejus est usque ad cælum.*" But it is to modern times, and chiefly to James Smith of Deanston, in Scotland, we are indebted for the knowledge that the subsoil passes with the surface, and that the value of the surface depends much on the character of the subsoil. And I think it is on the light sandy soils, resting on good clays, that we may hope and expect to see the most beneficial effects from the use of the subsoil plough. I do not anticipate much from it on heavy clay soils, unless accompanied with the most perfect system of drainage, as such soils will soon settle down into their former compactness, increasing wetness without providing for its escape. * * * *

"I have thought that sandy soils improved under the hoof and pressure of heavy animals; and on the other hand I am satisfied that clay soils are injured by being too closely packed, holding water on its surface to stagnation. Whilst sandy soils may be moved by the plough when wet, clay soils cannot be approached, adhering to the feet of ploughman and team, and depriving the plow of its power by adhesion. When dry, it is sun-burnt, difficult to be turned, and when turned up remains in large and unmanageable clods. Nor is the sandy soil of our county so much under the influences of our variable winters; it is not so powerfully acted on by frost, whilst on clay soils the roots of plants, especially wheat, are liable to be thrown out. Sandy soils are improved by the admixture of clay, and clay soils receive with astonishing benefit pure sand; it acts chemically and mechanically.

"Frequently on spots of cold acid clay soils, I have obtained stands of corn, where heretofore hardly a hill stood, by simply putting a pint or two of pure sand in the hill. To the gardeners of the county especially would I suggest proper attention to the admixture of soils. Sand is essential to the produc-

tion of many of the root crops, and the strawberry and raspberry can only be had in perfection from such soils, whilst clay is better suited to cabbage and all the fibrous rooted plants which have a tap root, hence its preference for wheat, red clover, and the oak. Twenty years tillage and observation induces me to say, that he has the best soil who has a good mixture of clay and sand throughout his arable lands. * * * *

"A thorough clearing of these old lands [lands deficient in vegetable matter] in the month of August, deep plowing, and seeding broadcast with the cow or red pea, as it best withstands rain storms, and a free use of plaster on the pea-vine before blooming, will furnish these lands with large and abundant supplies of vegetable matter; enabling the farmer to fatten his pork and his soil, making large additions to the supplies of food for both man and land. The pea should speedily become a crop of the county, both as a drill and broadcast crop. In a recent conversation with one of the best observers, and most accurate, pains-taking and successful wheat growers of Eastern Virginia, who stands at the very head of the list as a land improver, he gave it as his opinion that a heavy pea-fallow is the superior of clover in preparation for a wheat crop. And the fact is well known, that plaster acts as well on the pea as on the clover, increasing the spread of the vine, and yielding a more fruitful pod. These suggestions, I trust, may not go unheeded. If taken up, and prosecuted with industry and intelligence, they will tell speedily and largely on the wealth of the county, especially in the largely increased products of wheat and pork.

"The opinion is often expressed, that Guano will not act so efficiently on clay as on sandy soils. I see no good reason for it, and I certainly do not hold it. Mr. William Albright, of Chatham, has obtained and reported the very best results in a wheat crop on land that he describes as a deep red & wasted clay soil. And in July last, I never witnessed so marked an exhibition of the effects of any manure on any crop, as I saw on the red lands of Alamance, in cotton, where a liberal use had been made of Guano, associated with plaster, in equal parts, and applied to the drill. It surpassed my own experiments on a sandy soil. I am satisfied that Guano should only be used with plaster, charcoal, or fresh woods mould, and never in association with lime or ashes. Not until Rail-Road freights are reduced, shall we be able to use either lime, or any other mineral or marine manures, to any very great extent; and for an enlarged system of improvement in Orange we must rely mainly on the pea and clover fallow, with a bushel of plaster to the acre as a top dressing. Under such a system, we should soon exhibit improved fields of wheat; and one of the best grazing and dairy districts east of the mountains of our State."

The want of room compels us here to conclude our extracts for the present number of the *ARATOR*. We shall continue them in our next; and every reader should carefully preserve the numbers for re-perusal and reference, as the extracts from this Address alone may benefit many of our farmers to the value of hundreds of dollars. We have the promise of a review of the Address, from one of the most eminent

farmers of the State, who is deeply impressed with the good sense and sound sentiments with which it abounds, which we hope also to receive in time for our next number.

COMMUNICATION ON DRAINING.

FOR THE ARATOR.

MR. ARATOR: You will, I have no doubt, put our farmers in the way of plowing their ground right. This is all important in good cultivation. But there is something of equal importance in preparing lands before tending. One kind, and generally the most productive lands, need draining—the swamps lying in our bottoms and on our branches, creeks and rivers. These are our most valuable lands, and will handsomely pay the labor and expense of reclaiming. How can this be done? The plan of Mr. NELSON CLAYTON, read before the second Annual Fair of the Georgia and Alabama Agricultural Society, is a most simple, cheap and efficient method; and by your leave I will here give it for the benefit of the farmers of North-Carolina. It furnishes valuable information—valuable to many above all reasonable price—and should be carefully preserved by every one who owns or ever expects to possess a farm. Let me urge upon my brother farmers to IMPROVE—to DRAIN, and to CULTIVATE THEIR LANDS WELL. They will find in it a delightful employment, and a rich reward. In draining, much will be gained, besides bringing out their best lands, in getting a great deal of rich mud out of the ditches, to be made into compost manure to enrich their wornout high lands.

The plan of Mr. Clayton, received, as it deserves, a premium, and for such information our State Society ought to offer liberal premiums.

I am very respectfully,

A WORKING FARMER.

After trying many plans, I find open ditches to convey the branch water, and blind or covered ditches for the springy or oozy places, much the best.

First: Find some fall, either at a larger stream or very low place for the starting point or outlet of the stream or central ditch, which is to be left open. From this point stake off where the ditch is to be dug, which should be on the lowest ground you can select, avoiding short crooks as much as possible; the straighter the better; but if a crook is necessary, make it with a long, regular curve. Avoid all large trees and stumps, if possible. You will then commence at the lower end or outlet, and make it three or four feet deep as soon as the fall will admit so much; and indeed four or five feet deep would be better. But here, in the branch-

es of gray land, there is danger at that depth of striking strata of sand, which will cause the ditch to undermine and cave. This, of course, should be avoided, but cannot always be done.—On account of the unevenness of the surface in preventing short crooks, it is sometimes necessary to dig as much as six or seven feet deep in some places.

The width of the ditch depends upon the quantity of water it has to convey off; it should be wide enough to prevent overflows, if possible.

The fall of the ditch is sufficient, if the water will barely run from the last or finishing ditch; but generally as you proceed up the branch you will have more fall.

This ditch will drain the land except the springy or oozy places, which can be drained with blind or covered ditches. For these you will commence at the main stream ditch, at the nearest practicable point to the wet place, and dig a small ditch through it to extend as near to the upland as there is any wet ground; and from this ditch you can extend others through all the adjacent wet places on either side. All these ditches intended to be covered, should be from eighteen to twenty-four inches wide at top, according to the depth, and ten or twelve inches wide at the bottom; (I prefer twelve inches, as it gives more room to work;) from 3 to 4 feet deep; always keeping in or near the lowest or wettest places possible, by changing the course of the ditch, which you may do as often as necessary for this purpose. Always with an angle to give the desired change; but never with a curve, because it would be much more difficult to lay the bed or pipe.

The distance these ditches should be apart is altogether owing to the space between the wet places, which varies from about twenty to one hundred yards, and even farther. If the swamp is wide, the land wet and springy, a considerable distance next to the upland, it will be best to dig one from the main stream ditch, across to the lower end, and from there all the way up as far as this happens to be the case—running it through or on the upper edge of the wet ground; but not varying above or below it more than possible. If it is over a hundred yards long, stop and dig again across from the main stream ditch, then up as far as necessary. It is best not to have them too long.

There are sometimes marshy places where you can stand and shake the ground for twenty or even sixty feet around. These should have a ditch every ten or twenty steps. Always be sure to have them through or at the upper edge of the most moist or oozy places.

The depth of these, I have said, should be from three to four feet, but it is not always that you can have them that depth. I have some (or parts, rather,) only two feet deep, which have done well, and my opinion is, there is no danger when well done—yet being shallow, the timber is more apt to get dry and decay. The fall is sufficient if the water will merely run; but should there be no water in them while digging, I prefer as much as one inch to twenty-five feet. There is no danger of giving them too much fall, if it is regular, or not too sudden, since the quantity of water is too small to do any damage by washing. The bottom should be smooth as possible. It is best to fill up soon after digging to prevent caving, &c.

I have used different materials for the pipe, (to convey the water.) The first was rocks, which was too expensive and troublesome. The next was logs, in the following manner: In digging the ditch I had the bottom twelve inches wide, and 8 inches shallower than intended—then with an old shovel, bent at the sides so as to be two or three inches wide at the point, and six at top—dig a trench in the middle six or eight inches deep; have the logs from eight to twelve inches in diameter, then split and lay in with the round side down in the trench, so that in pressing on each side of the trench it will not force the dirt down or close up the pipe or vent. This plan does well where the ditch is free from sand, (which fills the vent up by caving.)

Last spring I made the pipe or vent in the following manner, with rails and boards, (somewhat on the plan of Mr. Ruffin, of Virginia): Split rails (poles will do) and boards of green timber—the rails from six to eight feet long, is very convenient—and from two to three or four inches in diameter. The boards should be from ten to 12 inches long, according to the width of the ditch at bottom, and from a half to one inch thick—the width immaterial. You will commence at the upper end—first, lay two rails in the ditch opposite each other, with the flattest side down—a long and short one, so that the joints will not be opposite each other—from one to three inches apart, according to the quantity of water to convey off. Across these rails you will place the boards edge and edge as close as you can, keeping all loose dirt and sand from between the rails as you place the boards—then lay down rails to the end of these, (they should be of the same size where they meet,) and boards across them as you proceed. Cover them with straw or leaves just sufficient to hide them when trodden down by the foot, as it is only to keep the

dirt from falling through the crevices in filling up. Be careful not to move the rails and boards from their places. Then pull in dirt or clay (not sand) carefully at first. When about half full tread down and slope the edges of the ditch, so as to make it eight or ten inches wider at top—then fill up with a rise for settling. At the angles and intersection of ditches, the rails must be made to fit together in such a manner as to leave the vent or pipe for the water as at other places.

On good solid bottom, rails one or one and a half inches thick will answer; but on muddy and soft places put the largest rails. I find occasionally places of quick sand, if there is any water, which is almost certain, especially when dug in the winter or spring, (the most suitable time for hauling the rails and boards through a farm, convenient to the ditches,) which are so soft that rails and boards will sink so as to stop up the vent or pipe. To avoid this, I put a double set of rails and boards the whole distance of the quick sand—pressing the first set just enough to be even with the solid bottom at other places. These places occur but seldom in a ditch only three or four feet deep. If such places were dug in a dry time, when there was little or no water, I think it probable the water, when it did come, would affect them enough to cause the rails and boards to sink and stop up the pipe or vent. Hence it would be folly to postpone for a dry time. As many of the wet places are caused by boiling springs, I find it useless to dig a ditch above or below to dry them; for I have some four feet deep in a few feet of such places without affecting them. Hence the only safe plan is to dig through them.

Believing a few remarks relative to the expense may not be amiss, I will state that four good hands generally dig from two to three hundred yards per day, where they do not strike large roots and stumps. One good hand, and a small one to hand rails and boards can lay the rails and boards from two to three hundred yards per day, where there are not many places of quick sand to double lay. Two hands to put in straw or leaves and pull in the dirt; and four hands to get the rails and boards and carry them to the place.

I have thus given what I believe to be the best and cheapest plan of draining and making blind or covered ditches that can be adopted out of wooden materials. If it is put in while green and fresh, secluded from the air, it will never decay so long as it remains wet. Mr. Ruffin says he has taken it up at the end of fifth year, and found no alteration.

I have now over two miles of blind ditches, all doing well, and have now (wet as the season has been) from forty to fifty bushels of corn per acre on

land which was so boggy and wet as to be a nuisance on any farm.

All flat land that is too wet, or subject to injury from standing water after rains, such as I see in going to Montgomery on the rail road, can be drained with these ditches. I would recommend ditching these lands in the following way: Where a field is four hundred yards wide, from the nearest outlet you will dig ditches five or six feet deep if the outlet will admit it, from two to four hundred yards apart, according to the situation of the land, and from these (or entering into them) you will dig small ditches and cover them, as near together as you think necessary after examining the situation well, which will probably vary from thirty to eighty yards apart; and I have no doubt but that it would be as productive and certain as any land of the same quality.

I believe blind ditches may be extended for miles, especially if there are no bogs or quick sand in them; but short ditches, not exceeding one to two hundred yards, are preferable, since they may by accident get stopped up. The damage would not be so great, and it would be more easily detected. That they will drain better than open ditches, I will cite one fact: There was a small pond in one of my fields through which I had an open ditch dug four or five years ago, but it did not pay for the trouble of cultivation. Although I had it cleaned out every spring, dirt would fall in from different causes, preventing a thorough draining. Being tired of this, last spring I made a blind ditch of it; the consequence is, there is good cotton on it, even this wet year.

N. B.—Since writing the foregoing, I have had two acres of ground (such as I have termed a boggy marsh) measured, and it yielded one hundred sixty-five and a half bushels of corn this year.

I presume all will agree with me that such land will pay for ditching.

A NORTH-CAROLINA FARMER.

A writer in the Wilmington Herald gives the following description of the estate of D. L. Russel, Esq., of Brunswick county, North-Carolina:

"Several years ago, Mr. R. made a large and judicious purchase of land, the most of which was covered with a fine growth of pines—but some seven years since, this tree, throughout this part of the country, was visited with a disease which destroyed immense forests, much to the loss of the proprietors; the immediate cause of which has never been discovered. Mr. R. was probably the largest loser in the State—it being estimated that not less than seven hundred thousand of his pines died in the course of three years; the greatest destruction being on the clay soil lands.

Previous to this his attention had been mainly turned to the turpentine business; but at present he is extensively engaged in cultivating the soil, mainly on the lands where the trees were killed.

He has about a thousand acres under the plough of which one half is cultivated in corn—last year's crop amounting to seven thousand bushels; and so extensive are his operations, that all of this will be consumed on the plantation during the year.—Last fall he slaughtered one hundred and fifty hogs, and as many cattle as were needed for domestic use. Among his stock I saw a Spanish jack, an Alderney bull, a Suffolk cow, and a Saxony ram, which proves that he spares no expense in procuring the best breeds of animals known.

It may be useful to know how he can raise such crops and sustain three hundred head of animals, on a naturally a poor soil. The answer is, by manure. I understand, from his overseer, that over five thousand loads of this article had been carried to the fields this spring. During the winter, the hands are employed in collecting immense quantities of leaves, grass, and mud, which are carted to the stables, and, after having been used for litter, are placed in the compost heap, and soon prepared for the field.

Considerable use is also made of marl, with which the county abounds, while guano is relied on, to some extent, for corn alone. There are connected with the place some one hundred and fifty negroes, of all sizes, a large part of which are mostly employed, during the summer and fall, in the turpentine department, of which the agricultural part is only for the supply of food and clothing; the net sales from his stills being about twenty-five thousand dollars per year.

I have understood that Mr. R.'s entire domain exceeds twenty-five thousand acres, and is much the largest, except the Green Swamp Company, of any proprietor in the county.

MANAGEMENT OF SWINE.

MESSRS. EDITORS: I give you my experience in the management of swine. In the first place, I take December pigs, let them run with the sows two months, then wean them, and enclose them in a pen, in which they are moderately fed on corn, with as much milk from the dairy, or good swill of some kind, as will keep up a thriftiness. As soon as clover is in blossom, I leave off grain feeding, and give clover three times per day until after harvest. I then turn them on to stubble. They remain there until about the first of September, whence I remove them to a pasture adjacent to my cornfield, and keep up their condition by giving them a small quantity of green corn. When the time of fattening comes on, I have my hogs in very fine condition to take on fat. I enclose them in a pen, and feed them altogether on corn and water, and by the time the weather is cold enough, which is the latter part of November, I slaughter them at the age of about eleven and a half months. With this treatment, they weigh from two hundred and twenty-five to two hundred and fifty pounds dressed pork. In the mean time, my second litter comes on in June, which have the benefit of the stubble with the first litter; and running with the sows, and sucking, they get a very fine start. At about two months old, I wean them and enclose them in a pen, taking the same process as with the first litter, only forcing their growth more rapidly by giving good slops, and as much corn as prudent, without

fattening too rapidly for their growth. I continue this process until the first of January. I then slaughter them at about the age of six and a half months. They will average one hundred and fifty pounds of dressed pork very readily. This is no fiction, but matter of fact, from personal observation.

You will now perceive that from one sow, say having two litters in one year, eight pigs in each litter, the result will be as follows: First litter, eight pigs, weighing two hundred and twenty-five to two hundred and fifty pounds each, aggregate eighteen hundred to two thousand pounds; second litter, eight pigs, average one hundred and fifty pounds, aggregate twelve hundred pounds; which would make from three thousand to three thousand two hundred pounds of dressed pork from one breeder. This has been my treatment of hogs for the last few years, and I am satisfied it is the most profitable way I have ever tried. Brother farmers, this is an experiment on the Bedford hog, which has the qualities of enormous size and great tendency to fatten at any age. Yours, &c.,
EDMUND J. ROSENBERGER.

Smith's Creek, Va.

From the New England Farmer.
"CORN FOR FODDER."

MR. COLE: Having seen several inquiries, in the New England Farmer, with regard to raising corn fodder, and having been in the habit of raising it for a number of years, I will give you a statement of my method of raising and curing. I think that sweet corn is preferable to any other. I sow it in drills, about three feet apart. I furrow deep, and fill the furrow with a compost, and drop the corn the whole width of the manure, and from two to three inches apart. I always cut it up before the frost. I shock it up immediately after cutting, in bunches so large that I think the wind will not blow them over. I place my arms round near the top, and bring them in as tight as I can, then break the tops over as you would a shock of stalks. I let them stand out till they are sufficiently dry to pack away in the barn. I have never had any trouble in curing fodder in this way. W. S.

THE SUN FLOWER.

The sun flower is a plant of much greater value than is generally known. Instead of a few being permitted to grace a parterre, and considered only as a gaudy flower, experience warrants my saying it should be cultivated by every planter and farmer as a part of his provision crop. It can be turned to profitable account on all plantations; for certain purposes it is more valuable than and other grain known to us; inasmuch as it can be made to yield more to the acre in exhausted soils, with little labor, and with greater prospect of success.

Its seed is wholesome and nutritious food for poultry, cattle and hogs, and very much relished by them.

From the seed an oil is obtained with great facility, as delicate, it is believed, as that of olives.

They are also pectoral. A tea made of them is quite as effective as flax seed, or any other, in catarrhal affections. On one occasion this tea, sweetened with honey, was of so much more service

to me than the prescription of my physician, that I attributed my early restoration to health to its agency alone. Certainly a favorable change did not occur till I used the tea, which I did upon the recommendation of a citizen of one of the upper counties of North Carolina.

Its leaves and stalk, in a green state, are preferred by cattle to any other provender. I have thrown green grass and fodder in one heap, and sun flower leaves in another, to try the cattle, and they have even commenced eating the latter first; this I have tried often with the same result. The whole, cut up in the green state and boiled with cotton seed, or a little meal, affords a delicious food for cattle and hogs.

[*Farmer & Mechanic.*]

COUGHS AND COLDS.—The Medical and Surgical Journal in an article upon this subject, says: "At this season, and forward into the Spring, coughs of various degrees of severity, are quite common in New England; and because they are so, they are exceedingly neglected. Some of the worst forms of disease, especially involving the delicate texture of the lungs, might have been obviated, at the commencement, by very simple means. Parents should allow their children perfect freedom in the open air, and inure them to the changes of temperature incident to a northern climate, instead of confining them, like exotic plants in a green-house. Young ladies are not half developed with us, before they become pale, languid, have a pain in the side, and then a cough. Before they have fairly begun to live, they drop into the grave, martyrs to thin shoes, a gossamer dress, and a chest made artificially too narrow for the performance of the vital functions. This is the destiny of the rich man's daughters to a fearful extent. They are frail as a moonbeam, when they might have been strong and healthful. On the other hand, the servant girls who range over the house, and are perpetually exercising their muscles, have round, handsome arms, a broad bust, a clear skin, fine health and light hearts."

INVINCIBLE HORSE BIT.—The patent granted, in this week's list of claims, to Messrs. Titus & Fenwick, is for a very novel purpose. Its object is to control runaway horses, and consists in governing a horse by exerting sufficient pressure upon his nostrils, to check respiration and thereby bring him to a stand-still. The pressure is exerted by means of two ornamental padded levers arranged on the sides of the horse's nostrils, and supported by the bit bar and operated, through the agency of the reins, by the rider or driver. Springs are also provided for throwing the pads off the horse's nostrils when his speed has slackened, these springs also serving to keep the pads out of operation when only the ordinary strain is exerted upon the bit, and thus render the contrivance capable of serving as an ordinary bit when the horse moves gently.—*Scientific American.*

GROWING FISH.—The Cleveland (O.) City Fact says that one of the most pleasing things exhibited at their late County Fair, was a lot of brook trout, artificially bred by Drs. Garlick and Ackley, whose labors in this line we have heretofore noticed. They showed several broods of fish in different stages of growth, and have demonstrated that it is just as easy

to grow fish as fowls, or any other description of food.

We hope all agricultural societies will take a hint from this, and offer premiums for such a show of fish as will best illustrate the fact to farmers that they can grow the cheapest food ever produced for man upon their farms wherever they have natural water, or can make artificial ponds. Let us have the premiums "for the best show of fish artificially produced upon any farm." It is a matter of very serious consideration, when fresh fish sells here at the same price per pound as beef, pork and mutton.

HORTICULTURAL.

From the Germantown Telegraph. STRAWBERRY CULTURE.

The strawberry is, and deserves to be, the most extensively cultivated of all our small fruits. Productive, easily cultivated, and equal to any fruit in flavor and general usefulness, it would be strange if it were not familiar to every gardener. Neither has it lacked notice in horticultural literature. Much valuable information has of late years been disseminated relating to its history and management; and although there are various opinions held, with reference to its botanical distinctions, its treatment as a fruit-bearing plant is reduced to a matter of certainty. On the former question it is not my present purpose to enter, but beg to offer a few remarks in regard to its general treatment and culture.

When we consider the habit of growth, season of ripening, and permanency of the strawberry plant, we are led to the conclusion that the soil intended for its growth should receive the most thorough preparation. Its dwarf, spreading growth is not favorable for after improvement of the soil, farther than what can be derived from applications on the surface. Ripening at a period which, in nine seasons out of ten, is characterized by deficient moisture in the soil, and extreme atmospheric aridity, suggests the idea of allowing the roots a deep and rich medium, where they can luxuriate uninfluenced by surface temperature. And when we further consider that a strawberry plantation should produce at least three crops before removal, we may safely aver that the preparation of the soil in the first instance is of the utmost importance.

This leads us again to the foundation of all permanent improvement—*subsoil culture*. Trench the soil at least 18 inches in depth, incorporating a heavy dressing of well-decomposed manure, and if the soil is clayey, or adhesive in its nature, an application of charcoal dust will be highly beneficial. As a corrective for clayey soils, charcoal cannot be too highly recommended. In a physical view, it renders the soil porous and permeable to gases, and chemically, its absorbing and disinfecting properties are equally valuable, the amount of ammonia and other gases which

it is capable of absorbing giving it a value as a fertilizer. On a soil thus treated, there will be no danger of a defective, half-ripened crop, or the plants burning out, as frequently happens, on poor shallow soil, for although the strawberry is a plant of small structure, I have traced the roots, in favorable soils, a distance of three feet from the surface.

There are various methods of arranging the plants. They may be placed in rows thirty inches apart, the plants standing one foot from each other in the row, or, planted in beds, six feet wide, thus admitting of four rows the plants fifteen inches apart.—Some strong growing varieties require more space than the above to attain their greatest perfection, and such as Boston Pine, Goliah, &c., do best in hills thirty inches, or three feet apart. The best method for garden culture is the first mentioned, keeping between the rows clear of weeds and runners, unless the latter are required for a new plantation, which on the principle of rotative cropping, should be done every third or fourth year, as the plants seem to retain their vigor and fruitfulness.

Young plantations may be set out at various seasons; either at midsummer, fall, or early spring. As early as young plants can be obtained, say about the last of July or beginning of August, is the time for midsummer planting. Choosing a cloudy day for the operation, the plants immediately on removal should have their roots preserved by dipping them in a puddle. This system of encasing roots with a coat of mud, is very useful and efficient, and may be practised in the transplanting of all young plants, in dry weather, as it obviates, in a great degree, subsequent attention in watering, a thin covering of thin grass, or litter of any description, should now be laid about the young plants. Planted thus early, good growth will follow, the plants mature buds before winter, and produce an average crop the following season.

Fall planting is frequently practised, and if the plants are set out early, not later than the middle of September, they will root and get somewhat established before winter; but the alternate freezing and thawing of the soil during winter, throws them out of the ground, unless the soil is of a sandy nature and protected with a covering of litter. Instead of planting them out permanently in the fall, it is more advisable to place them a few inches apart in a sheltered spot, where they can be preserved by a covering of leaves all winter, and planted out early in the spring. This practice not only affords time for suitable and thorough preparation of the ground, but the plants being carefully lifted with small balls of earth to their roots, will produce a more uniform and vigorous plantation, than those permanently planted in the fall.

Mulching is a very material consideration in strawberry culture, more particularly in spring and fall.

Covering the ground between the plants with hay, leaves, &c., in spring, preserves the fruit while ripening, and retards the escape of moisture from the soil. In the fall a covering of short manure will serve the double purpose of enriching the soil and sheltering the plants during winter. Tan bark has been much recommended for this purpose, and has been pronounced a special manure for the strawberry. I have used it largely for many years, but have not discovered its utility as a manure; its protecting qualities can not be questioned, and may be usefully employed as a substitute—of partly decomposed leaves and stable-yard manure—for winter covering.

The long list of named varieties, and the constant additions to the list, renders it difficult to make a choice selection; some catalogues enumerate over 100 named sorts. Having tested at least half that number, I prefer, and would recommend the three following as combining all that has been attained in this fruit.

1. For flavor alone, Burr's Pine. 2. For size and flavor, Hovey's Seeding, and for size, M'Avoy's Superior. These with a few plants of the Cushing, or or Buist's Prize, as fertilizers, will leave little to be desired in the excellence of this valuable fruit.

Some time ago the horticultural world was thrown into a small state of excitement by the announcement that in New Orleans they had a strawberry which produced a succession of crops during the summer.—Plants of this variety soon found their way to the North, but without exception, they have proved an entire failure. No doubt this peculiarity depended altogether upon the climate and treatment. I have frequently, by peculiar treatment, gathered two crops in one season from the same plants. Our strawberry season might be much prolonged, were means taken to irrigate the plants when necessary. This might easily be effected on sloping ground, by forming a series of slight terraces, the plants grown in narrow beds, somewhat elevated, leaving slight trenches between the rows of plants. These level platforms could then be saturated with water at pleasure, and communication being secured, the surplus water would descend from one to the other. The rain water falling on a dwelling house or barn, collected in a tank, would be found sufficient for an ordinary plantation, and there is no doubt, would amply repay all trouble, both in the quantity and quality of the produce.

WILLIAM SAUNDERS,

Landscape Gardener, Germantown.

REMARKS BY THE EDITOR.—The above appears to cover the whole ground relative to the practical culture of the strawberry; and the statement and directions are given in so plain and straight forward a way, as to be comprehended by every one. Mr. Saunders, of the firm of Mehan & Saunders, Landscape Gardeners and Nurserymen, whose grounds are directly opposite the fine mansion of Mr. Carpenter, on Germantown avenue—is a thoroughly practical man, and understands in all its ramifications, the culture of this

valuable fruit. Hence his suggestions are founded upon practice, and are deserving of every consideration.

THE LAWTON BLACKBERRY.—This is a new and entirely distinct variety of the blackberry—the first improvement, we have reason to believe, which has ever been discovered or obtained of this plant.—In the township of New Rochelle, where it originated, not a single plant has been found similar to it growing wild although all the common varieties abound there. Its size and quality do not depend upon careful cultivation, but wherever the common kinds will thrive, this may be had in perfection.—It grows tall and upright frequently ten feet or more in height; and the flower, leaf, and stalk being proportioned to the size of the fruit, and always healthy and free from blemish, it is an embellishment to the garden.

The stalks which shoot up from the roots during the summer, bear fruit the ensuing year, and die in the autumn. This natural arrangement for reproduction is most beautiful. The stalks, heavily laden with many hundred berries, would be exposed to the sun, ripen the fruit prematurely, and perish early in the season; but being protected by the new shoots, they continue to yield fruit daily for six or eight weeks.

CRANBERRIES.—Large quantities of these valuable and wholesome berries are now being cultivated in the Eastern States upon upland. Their production, has until recently, been of spontaneous growth upon wet or marshy grounds, but a superior fruit is now raised upon dry soil. As cultivated, they are a deciduous plant, rendering an immense annual yield, which is highly profitable to the farmer.

The plants may be purchased at a small cost in many of the eastern cities or towns especially throughout New Jersey.

TO RAISE GIANT ASPARAGUS.

A writer in one of the early volumes of the Horticulturist tells us how to grow common asparagus so that it will always rival any giant production. He says:

Every one who has seen my beds has begged me for the seed—think it a new sort—but I have pointed to the manure heap—(the farmer's best bank)—and told them that the secret all laid there. The sight was only such as might be seen in every garden.

About the first of November—as soon as the frost has well blackened the asparagus tops—I take the scythe and mow all down close to the surface of the bed; let it lie a day or two, then set fire to the heap of stalks, burn it to ashes over the bed.

Then go to my barn-yard; I take a load of clean, fresh stable manure; and add thereto half a bushel hen dung; turning over and mixing the whole together throughout. This makes a pretty powerful compost. I apply one such load to every twenty feet in length of my asparagus beds which are six feet wide. With a strong three pronged spade or fork I dig this dressing under. The whole is now left for the winter.

In the spring, as early as possible. I turn the top of the bed over lightly once more. Now, as the asparagus grows naturally on the side of the ocean, and loves salt water, I give it a usual supply of its favorite condiment. I cover the surface of the bed a-

bout a quarter of an inch thick with fine packingsalt; it is not too much. It gradually dissolves. Not a weed will appear during the whole season. Every thing else, pigweed, pursley, all refuse to grow on top of my asparagus beds. But it would do your eyes good to see the strong, stout, tender stalks of the plant itself push up through the surface early in the season. I do not at all stretch a point when I say that they are as large around as my hoe handle, and as tender and succulent as any I ever tasted. The same round of treatment is given to my beds every year.

AMERICAN APPLES.—It is conceded that the best apples in the world are produced in the United States, and the best *winter* apples grow north of 30 deg. north latitude. Within a few years past, several thousand barrels of fresh apples have been shipped from New York to Liverpool and London, at highly remunerative prices, the best quality, in good condition, bringing from eight to ten dollars a barrel and in some instances, even *twenty dollars a barrel*. The charges for freight, by clipper ships, are from 30 to 50 cents a barrel. Steamers charge from \$2 to \$3. —*Ex.*

MULCHING WITH WOOD SHAVINGS.

E. Hersey, in the *New England Farmer*, recommends wood shavings as a mulch for young orchards. He thinks them equal to any thing he has tried. Here is his experience;

Having a few fruit trees set on a barren knoll, which, although they had yearly assumed the appearance of premature decay, and in fact had already taken the down hill course, I resolved to try the effect of mulching with shavings. Around each tree I put two barrels of shavings, within a circle of eight feet in diameter, leaving a small space between the shavings and the tree to be filled with fresh earth. To keep the shavings snug, a thin coat of grass was spread over the whole. To fully test the experiment, a part of the trees were treated the same as they had formerly been. After the lapse of one year, (which was last year) those trees mulched with shavings, put out vigorous shoots, and their dark green foliage could be easily distinguished from the others at a great distance. So well satisfied was I with the result, I last year used upwards of a hundred barrels, which has proved equally beneficial to the trees, while the first I mulched continued to thrive even beyond my expectation.

If any of your readers have used the above named material, I hope they will communicate the fact, and state with what success.

I have found brush from evergreen trees to be an excellent material for mulching young orchards.

Had this been resorted to last Summer the life of many a valuable tree might have been saved from the drouth.

* *From the New England Farmer.*

CONGENIALITY OF STOCKS AND SCIONS.

MR. COLE: This subject seems to be very imperfectly understood, probably from the fact that those most engaged in horticulture have but little time or desire to try experiments. Enough has been done, however, by amateurs and others, to show that scions set in unnatural stocks will frequently grow, and that some such scions are productive of fruit, even better than on their own bottoms. The drawback, however, is, that they will not live

so long. But the pear on the quince, which some years past was thought to be but of short duration, is now known to live twenty-five years. This union seems to be the most successful of unnatural unions. There was a paragraph in the first volume *N. E. Farmer*, p. 40, which had traversed the rounds of the horticultural papers, stating that a gentleman visiting England had tasted of an apple grown on a pear stock, and that "it had a peculiar flavor, somewhat like a pear." See, also, the same on p. 79. It seems from these paragraphs, that the apple can be successfully ingrafted into the pear.—It is not understood, however, that the *reverse* is so successful, if we except the Seekel pear, which is said to do quite well so far as tested. Now, in this union, can it make any difference whether the pear is the scion or the stock? If the Seekel pear does well or better on the apple, may there not be some other varieties which will do as well? There seem to be different natures in pears, (as some will, and others will not, grow well on the quince;) and may we not reasonably infer that there are many other pears which by proper testing, will yet be found congenial with the apple? Having last year quite a number of very suitable apple stocks, I inserted some of the scions of the *Beurre Diep*, *Louise bon de Jersey*, and one of the *Beurre d'Aremberg*. The two former kinds did well as respects growth; the latter put forth only a couple of leaves, and died the last winter. The *Dieps* and the *Jerseys* are grafted a foot from the ground, and I shall let them take their course, and at some future day may report their fate. This year I have inserted a variety snug to the ground, with a view of their *re-rooting*. I have 2 other pears inserted on *forest* stocks, (different from any which I have heard experimented upon,) and anxiously wait the issue. I intend to make still further experiments, for my own gratification.

I have heard of pear scions bearing well on apple trees in a bearing state, and think that inserted in small stocks they may *begin* to bear a little; but whether they will so continue, in either case, is doubtful. Nevertheless, it seems to me, that if the apple will do well on the pear, the pear will do equally well on the apple. L.

Boston, April 22, 1850.

LOW-HEADED FRUIT TREES.

By having lowheaded fruit trees, the sun, which is, perhaps, in our hot and dry summers the cause of more disease and destruction in fruit trees than all other diseases together, is kept from almost sealding the sap, as it does in long, naked trunks and limbs. The limbs and leaves of a tree should always effectually shade the trunk and keep it cool. The leaves, only, should have plenty of sun and light; they can bear and profit by it. If trees were suffered to branch out low, say within one or two feet of the ground, we should hear very much less of "fire-blight," "frozen sap-blight," black spots and the like. The ground is always looser, moister, and cooler under a low-branching tree, than under a high one. Grass and weeds do not grow a hundredth part so rank and readily, and mulehng becomes unnecessary. The wind has not half the power to rack, and twist, and break the tree & shake off the fruit—a matter of no inconsider-

erable consequence. The trees will be much longer lived, and more prolific, beautiful, and profitable. The trees are more easily rid of destructive insects, the fruit is much less damaged by falling, and the facilities for gathering it are much greater: there is less danger in climbing, and less of breaking limbs. The trees require less pruning, and scraping, and washing; and the roots are protected from the plough, which is too often made to tear and mutilate them.

USEFUL RECIPES.

TO KEEP SILK.

Silk articles should not be kept folded in white paper, as the chloride of lime used in bleaching the paper will probably impair the color of the silk.—Brown or blue paper is better; the yellowish, smooth Indian paper is best of all. Silk intended for dress should not be kept long in the house before it is made up, as lying in the folds will have a tendency to impair its durability by causing it to cut or split, particularly if the silk has been thickened by gum.

Thread lace veils are very easily cut; satin and velvet being soft are not easily cut, but dresses of velvet should not be laid by with any weight above them. If the knap of thin velvet is laid down, it is not possible to raise it up again. Hard silk should never be wrinkled, because the thread is easily broken in the crease, and it never can be rectified.—The way to take the wrinkles out of silk scarfs or handkerchiefs, is to moisten the surface evenly with a sponge and some weak glue, and then pin the silk with some toilet pins around the shelves on a mattress or feather bed, taking pains to draw out the silk as tight as possible. When dry, the wrinkles will have disappeared. The reason of this is obvious to every person. It is a nice job to dress light colored silk, and few should try it.—Some silk articles should be moistened with weak glue or gum-water, and the wrinkles ironed out by a hot flat-iron on the wrong side.—*Scientific American*.

HOW TO PACK FIRKIN BUTTER.

Mr. Josiah King, before the Alleghany County Agricultural Society, gave a few particulars of the manner in which firkin butter was packed for use in the United States Navy. It was put in small firkins, made if possible of bass wood, that having been found preferable as freest from pyroligneous acid. The firkins were then placed in a cask, and brine so strong as to float an egg poured over them. It is in this way that butter could circumnavigate the globe, and yet be fresh at the end of the voyage.

PRESERVING EGGS.

Why are eggs preserved by rubbing them with butter? Because the butter closes the pores in the shell, by which the communication of the embryo with the external air takes place. The embryo, however, is not thus killed. Varnish has a similar effect. Reamur covered eggs with spirit varnish, and found them capable of producing chickens after two years, when the varnish was carefully removed.

TO REMOVE INK FROM COTTON AND LINEN.—Dip the spotted part of the linen into melted tallow, wash

out, and the spots will disappear, and leave the linen as white and pure as before it was soiled.

HOW TO MAKE VINEGAR.

There are many erroneous notions entertained among our farmers about making vinegar. The old plan was to put out cider, or water and molasses, in a cask, to the sun, and expose it to the luminary with a bottle in the bung-hole. There are still as many ideas entertained about making vinegar, as there are about making soft soap, and *luck* is frequently held to be the umpire who decides whether it will be vinegar or no vinegar.

The reason why cider or other fluid mixtures change their nature and become vinegar, is owing to a transformation of the particles and then a separation of one or more, and a combination of others. The oxygen of the atmosphere, although it is not now as once believed to be, the only acidifier, still it is the great one, and vinegar is formed by the cider parting with its carbonic acid gas, which it cannot do without absorbing oxygen. The reasonable way, then, to make vinegar rapidly and surely is to expose the cider as much as possible to the atmosphere.

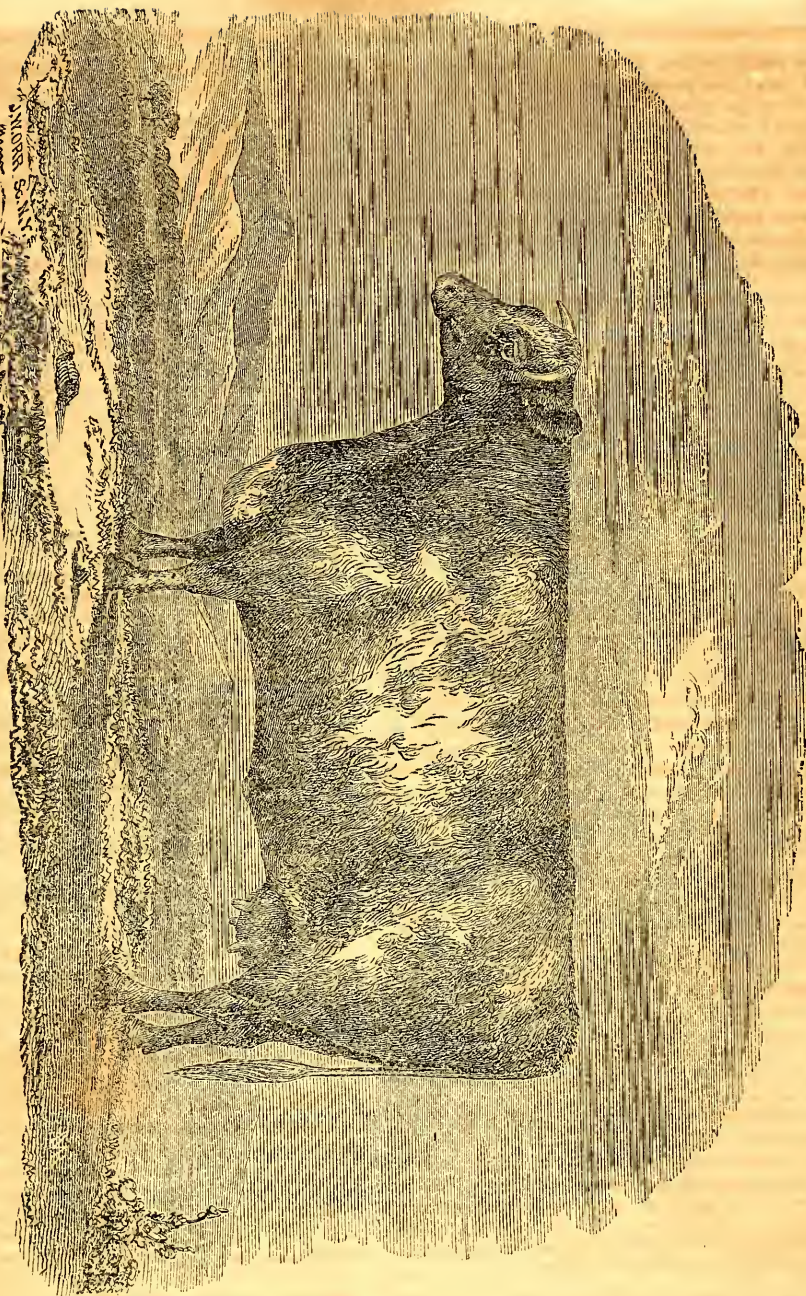
The new way, and what is supposed by many to be a patent way to make vinegar, is to let the cider percolate over a very exposed surface. This is the way they make it in the vinegar manufactory. The apartment where it is made is freely exposed to the air, and is kept at a temperature of 50 deg. The cider is left to run in small streams into troughs with bottoms full of small holes, and from that over very fine wood shavings, such as soft maple, and let these be fully exposed to the air and resting on a slatted bottom made of clean boughs or laths, below which the vessel for receiving it should be placed. Vinegar can be made from molasses and water, grapes, corn-stalks, beet roots, and many other substances, by this process, in a few days.

Cider, however, makes the best vinegar. Many modifications (for cheapness) of the above plan, may be resorted to—the grand secret being the exposure of the liquids to be changed into the vinegar, in layers or strata, to the oxygen of the atmosphere.—There is not a farmer but with a cask, and old tub, and a few shavings, could make good vinegar in one-fifth of the period now required by the common plans in use for that purpose.—*Western Farmer*.

GUANO FOR MELONS. We had a very fine melon patch which was well nigh destroyed by the striped bug. The vines had just commenced running, and in two or three days the bugs had stripped nearly every leaf. As a desperate remedy, we applied a handful of guano on top of the hill as far as the vines had run, taking care that it did not fall on the leaf. In twenty-four hours not a bug was to be seen; the vines assumed a healthy and vigorous appearance, and were loaded with fruit.—This experiment was not on one vine only, but hundreds. *Ex.*

CAROLINA RICE AND WHEAT BREAD.—Simmer one pound of rice in two quarts of water until it is quite soft; when it is cool enough, mix it well with four pounds of wheat flour, yeast and salt as for other bread—of yeast, four large spoonfuls. Let it rise before the fire. Some of the flour should be reserved to make the loaves. If the rice swells greatly and requires more water, add as much as you think proper.

LADY MILLICENT.



Our readers will no doubt be pleased with the handsome picture of this splendid cow, here presented for their inspection. She was imported, with eight other short horns, last Fall, by JONATHAN THORNE, Esq.— Since then, he has disposed of all his stock, including Short Horns, South-Downs, Swine, &c. to his son, SAMUEL THORNE, Esq. of Thorne-dale, Washington Hollow, Dutchess Co., N. Y. We know nothing of Mr. Thorne personally, but learn from the American Agriculturist, that from his high character, the public may

rest assured his celebrated stock “will be bred with great care, and in the best and most scientific manner.” We hope soon to be able to introduce to our readers other splendid animals belonging to his herd.

The following is the pedigree of LADY MILLICENT: Roan, calved May 20, 1847. Got by “Laudable” (9282); dam, “Millicent,” by “Gouchy (6051); g. dam “Fair Frances” by Sir Thomas Fairfax (5196); gr. g. dam “Feldom,” by “Young Colling (1843); gr. gr. g. dam “Lilly,” by “Red Bull” (2838); gr. gr. gr. g. dam “Lilly,” by “Son of Holling” (2131);— “Partner” (2409);— by R. Alcock’s Bull (19.) She was bred by T. H. Hawks, Esq. Farmly Hall, Eng., and is a cow of wonderful substance and capital touch.

PRACTICAL HINTS ABOUT POULTRY.

Whether the large-sized varieties of fowls, which are "all the rage" now amongst fancy breeders and dealers, are really preferable to the old-fashioned barn-yard fowls is a subject on which there are two opinions among those who have tried both. To say nothing of the enormous prices which they occasionally command, they weigh heavily in the market scales or fill a large platter on the dinner table. But, on the other hand, they are great gormandizers themselves, and are generally considered difficult to raise. Roosters should be changed as often as once in two years, and pains should be taken, in replacing them, to procure strong, healthy, and perfect birds—the hen will lay better and hatch more chickens. Only a small number of hens should be kept in one house, or together.—We have known repeated instances in which keepers of poultry have become disgusted at their failure to lay, and have determined to kill them off.—They have commenced reducing the number, which was perhaps forty or fifty, and when they got down to half a dozen, were surprised to find every one of the hens laying, and the supply of eggs for the family better than the whole number furnished. As to profit, we doubt whether, if all their food be bought, the eggs and chickens produced by any breed, and sold at the regular market prices, for the table, will pay the expenses of keeping; but it by no means follows from this that hens are not a source of profit on a farm. They eat much of what would otherwise be entirely lost and wasted; and a small patch of buck-wheat, sown at a trifling cost, and left on the ground where they can stroll over it and feed at their pleasure, will keep them as fat as butter. The main point is, the great value of the manure of poultry. The hen roost is the place where most farmers should go for their guano. If obtained there, it will invariably prove of good quality. There need be no fear for those who get their guano from this source that it will turn out to be spurious or inferior. We doubt whether even intelligent farmers would estimate at more than one hundredth part of its amount the quantity of excellent manure which can be made in this way in the course of the year. The hen, duck, goose, and turkey-roost should be supplied with several loads of peat, swamp-muck, or loam, spread evenly over the surface of the floor, and on this there should be scattered a thin layer of sand or gravel. On rainy days, when the work can be done as well as not—and as often as practicable—this should be all shoveled over, and the manure thus mixed with the other ingredients. The compost soon becomes strong, when it can be removed, and a fresh supply of suitable material be thrown in. The house is kept sweet, clean, and healthy for the fowls; and if any farmer will adopt this plan, and practice it faithfully for five years, and keep an accurate account of the crops raised directly from the compost made with the poultry manure, and from the manure made by feeding those crops out in their turn, he will be amazed at the amount of cash which he will have realized, and at the permanent improvement of his farm.—*Londonderry Standard.*

Plow deep while sluggards sleep.

CLOVER AND CRAB GRASS.

FOR THE ARATOR.

It is often said clover grows well in none but a cold climate, and that it cannot be raised to advantage in North-Carolina. This is a great mistake, as I know from experience. Any where in North-Carolina, it may be cultivated profitably for hay and for improving the land. I have raised it, and seen it raised here in as full perfection as I ever saw it grow on the red hills of Virginia, where it is considered an indispensable crop. It has been raised with success, as far South as Alabama. It does not depend so much on climate or latitude, as is generally supposed. The main thing is the quality and preparation of the soil. First, it requires lime, which may be substituted by a bountiful supply of ashes and stable manure; for the land must be strong, if not rich, to bring clover for hay. A sufficient coat of it may, however, be raised to improve the land, by the aid of ashes or lime alone, unless the ground is dead poor; then a sprinkle of manure, at least, must go with it. To prepare it for sowing, the land should, first, be deeply sub-soiled; secondly, rolled; thirdly, harrowed until thoroughly pulverized; fourthly, sowed, a gallon and a half of seed to the acre; and, fifthly, rolled so as to press the seed in the earth.—The harrow puts them in too deep. I sow about the first of March, with oats. After they are cut, I top dress with twenty-five bushels of ashes mixed with one bushel of plaster and ten cart loads of well rotted chip manure or rich woods mould, to the acre, if the ground was not sufficiently manured before sowing. You say it is best to sow orchard grass with it. I think it would, but have never tried it.—I have always succeeded in raising fine crops of clover, when I have superintended it myself. Sometimes, when I have left it to others, I have failed.

Let it be borne in mind, to raise for hay, clover or any other kind of grass, the earth must be naturally or artificially made rich. When rich, our lands will produce spontaneously the crab grass in great luxuriance and abundance, which, if cut at the proper time, makes as good hay as any of the grasses. I do not think this grass is properly appreciated; and why? because it is a great pest to corn and cotton, grows too naturally among us, is a home production, don't come from the North, and is never saved for hay until the sun or frost has killed it.

AGRICOLA.

DEEP PLOWING PROTECTION AGAINST DROUGHT.

FOR THE NO.-CA. ARATOR.

MR. EDITOR: As Gov. Graham said, in his speech last winter, "I am a very poor farmer, and desire to be a better." I am much pleased with the first number of your paper, and think it ought to be read and supported by all of our farmers, for it is the very thing to make us all "better farmers." As you ask for the experience of the practical men, who are striving to improve, I shall give you scraps of mine from time to time. At present, I have only time, at the close of my day's labor in the field, to state what I have found to be a good remedy against the fatal effects of drought on corn, and that is *deep plowing*. Some years ago, I prepared a two acre piece of ground by bedding it up for rows five feet apart, sending a long keen wrought-iron dagon about seven inches deep, and following it, in the same furrow, with a coulter as deep as possible. I then opened the middle of the

bed for a drill with a wide furrow, and cheeeked it with a euter; cheek rows 18 inches apart. In each hill, I put a shovel full of stable manure, that had been composted about equal parts with rich scrapings of earth, and turned a furrow along side of the first, to throw the sliee back upon the manure. It was then crossed again in the same cross furrow, to open for planting and to mix the manure with the soil. The corn was then dropped and covered with the weeding hoe. When up, it stood five feet by eighteen inches, one stalk in the hill. The first plowing, after that, was done with the dagon, as deep and close as it could be run, pulverizing light and fine. The subsequent workings, were twice with the cultivator and weeding hoe—sowing it broadcast with peas the last time. Well, that summer, about the time it was beginning to silk, there came a drought that literally burnt up some of the neighboring fields. I didn't see but one white tassel in this whole two acres, and it turned me out seven barrels and half to the acre, generally long well filled ears, with but little appearance of having been shortened by the scorching drought that cut off one half the crop that year generally. And the pea vines covered the ground like a wilderness. In planting, the process was rather tedious, but it paid handsomely for the trouble. Truly yours J. T.

April 12, 1855.

FOR THE ARATOR.

BOOT AND SHOE MANUFACTORY.

MR. LEMAY. I have read with very great pleasure your article in the April, No. of the "Arator" on the subject of a "Boot and Shoe Manufactory" in our State: it is a matter on which I have thought before, and am glad you have called public attention to the subject, and hope steps may be taken at once to start the patriotic enterprise: there is no good reason why we should not have a large Manufactory of the kind in the State: we have all the materials for it, and why not have it?

We have the capital, the hands, the hides and bark for tanning, and the skill to manage it, if once started. One fourth of the interest on the amt we annually pay Massachusetts alone would start it, and can there not be found *patriotism* enough in thirty counties to subscribe \$1000 a piece? can there not be found ten men in the thirty counties accessible to Raleigh, with liberality enough—to say nothing of the profit of the investment—that will subscribe \$100 each upon the condition \$30,000 is raised in this way? Certainly there can. I sir, will be one for Wake County, and will pledge \$1000 for Wake County. What say you, Mr. Lemay? You will be one I know, and I think I can put my finger on 8 more.

Possibly my estimate for an establishment of the above kind is too small. If so, let's hear from some one, with more information on the subject; for, I confess, I know very little about the cost of such an undertaking; but I know this:—*we ought to have it, MUST HAVE IT, AND WILL HAVE IT*, if the great *Lever Power* of the Country, will take hold of it—I mean the Press. So roll on the Ball—and God speed the good work.

FRANKLIN.

Raleigh.

REMARKS BY THE EDITOR OF THE ARATOR.

The above communication, we need not say, is

from a source entitling it to serious and favorable consideration. The stamp of intelligence, patriotism and wisdom is upon the face of it. That the work here pressed upon the attention of the public *must* and *WILL BE DONE*, we cannot doubt.—The means suggested by "Franklin" makes it perfectly easy and free from the possibility of material loss to any person, with a certainty of gain, if properly managed, to all concerned, and of large additions to the general prosperity. We respond promptly and cheerfully to the pledge made for us by our esteemed correspondent—who could find it in his heart to decline?—and we authorize him to put down the Editor of the "Arator" not for the one hundred only, but for five hundred dollars; and we further pledge the County of Wake for five times the amount which is assigned to her in the equal proportions allotted to the thirty counties.—We hope the patriotic in other counties will also willingly come forward and aid in this important *North-Carolina enterprise*. Franklin occupies a position giving him peculiar facilities for soliciting subscriptions and getting up a stock company. We hope he will commence the task immediately. The matter has already been delayed too long, and there can be no reason for further delay.

To the Editor of "The Arator."

MEADOW CREEK, April 9th, '55.

DEAR SIR: I received the first No. of the Arator on last Thursday; and, according to promise, remit you the \$1.00, which you will find enclosed. I am a young farmer, and consequently am not able to give information. But I hope by asking questions, when I have opportunity, to get information which will be useful to myself and others. The first one which I wish to know is the *modus operandi* of "altering Colts," when only one testicle has come down. I have one in that fix now; and I am fearful he will trouble me. I notice in Europe they castrate colts at any age they please. Here we cannot do it until the testicle appears which is generally at 2 years old. If you can give the necessary information in the Arator, I know it would be useful. Do you know of a good pump? The chain pump is the best I have seen, but it has several defects.

Yours respectfully,

ALEX. WILSON, Jr.

Remarks by the Editor of the ARATOR.—In answer to the first matter of inquiry, we can only say, we do not believe any plan can be adopted by which the non-appearing testicle, in some cases, can be reached. The reason, in such a case, that it does not come down is, the orifice provided for it by nature becomes too contracted for it to pass, and any attempt to enlarge it would either be fatal to the animal or bring down the intestines. In

most cases, however, it can be reached by throwing the colt on a bed of straw, and pressing and stroking down the parts. This external manipulation will bring it down, by causing a relaxation of the muscle to which it is attached, and by the force of the pressure of the hand, unless, by age, the parts have become too rigid, or the muscle which nature has provided for only temporary purposes, has been absorbed or lost its power.—In all cases where this difficulty does not occur, it is best to operate with the colt standing on his feet, which can be done by placing him backwards in the jam of a fence, with a strong hand at the bridle to hold him still.

One thing should be carefully observed in altering all animals, and that is, the orifice made in the outer skin should be made as large as the parts will allow, to prevent it from healing over until it is healed within.

In regard to the second inquiry, respecting the best pump, we have not sufficient knowledge of the operations of such machines, to give an opinion of our own. We know, however, that many hydraulic machines have been invented for raising water; among which are the Scoop Wheel; the Persian Wheel; the Noria; the Hydreole; the Archimedes Screw; the Spiral Pump, which raises water to the height of forty feet; the Centrifugal, a rotary pump; the common *Sucking-Pump*, so called because the water is raised in it by the pressure of the atmosphere. They are used in wells and in ships, by boring a large hollow in logs, and inserting two hollow plugs called boxes, with valves to prevent the water when forced up from running back. The upper box is a hollow movable piston attached by its rod to the handle of the pump. When the pump is full of water, every stroke of the handle raises this box, together with the column of water above it, and brings it out.—This is considered, by a highly intelligent gentleman of this city, the best pump for common use in wells, when properly constructed. Then, there are the *Forcing Pump*, which can be made to send the water to any height desired; the Plunger Pump, for raising large columns of water; Delahire's Pump, partaking of the nature of forcing and sucking pump; Bag Pump; Double Acting Pump; Hydrostatic Press; Lifting Pump; Hero's Fountain; Rolling Pump; Eccentric Pump; Chain Pump; Hungarian Machine; Hydraulic Ram; and a new pump for mines, by Donkin & Co., England, which works by direct action, without the intervention of main rods, buckets, plungers or valves, and throws a continuous stream of ten tons of water per minute.

Not being very familiar with the practical operations of these machines, we addressed a note to Mr. H. G. Bruce, of this city, one of the most intelligent and skilful machinists in this or any other State, asking his opinion on the subject; and he has kindly obliged us with the following reply, which is entitled to entire confidence:

RALEIGH, N. C. April 13th, '55.

MR. LEMAY. DEAR SIR: Your inquiry respecting the Pump is now before me. In reply, I would say, that it depends entirely upon the use to which the Pump is to be applied as to its merits. As simple, convenient and durable pump as any I am acquainted with, is sold by J. Woltering, of this place, for *yard purposes*; but all pumps are liable to the same objections; they will wear out, and particularly in this locality, where the water contains so much sand in suspension. I am not acquainted with any pump for daily use in the yard that has given more satisfaction than the gutta percha pump. The agent for the pump, (when in Raleigh), may be found at Mr. Bain's.

For all depths of wells not exceeding thirty feet, I think Woltering's Pump quite as good as any, and the cheapest pump in use; and for all wells over thirty-feet, the gutta-percha is no doubt equal to any in use.

Yours truly and respectfully,
HENRY G. BRUCE.

BEES AND FRUIT TREES.—A writer in a literary journal of Paris, states that the bees greatly improve the fructification of fruit trees. Orchards in which several hives are kept always produce more than those in which there are none. In the Provinces on the Rhine, the fruits are more abundant and finer than in any other part of Germany, and there it is the custom to keep large quantities of bees. Plants, too, which bees visit, thrive better in the neighborhood of hives.—*Rural New Yorker*.

A NEW MANURE.

Robert Bryson, Esq., of Cumberland county, about eight miles from Harrisburg, has been experimenting for the last ten years, to make exhausted tan-bark available and valuable as a manure.—Besides his magnificent farm, he likewise carries on the tanning business. Finally, after a great deal of expense and many failures, he has succeeded in discovering a method of producing from the tan an efficient manure. This is his plan: he has his tan wheeled out on a level piece of ground, and levelled off, two or three feet thick. Over this he spreads a layer of two or three inches of lime, and over that, again a stratum of tan, then a layer of lime, and so on. He lets the bed, so prepared, remain for two years: at the end of that time he finds himself in possession of a bed of manure, the effects of which upon the land can hardly be surpassed for the richness of its product and the durable fertility which it imparts.—*Lancaster Co. (Pa) Farmer*.

RALEIGH, N. C. MAY, 1855.

☞ All who receive this number of the ARATOR, will be entered as regular subscribers to the work, unless it is returned to the Editor, marked "refused," with the person's name to whom addressed, on it.—This liberty, however, is taken with but comparatively few among those who are known to be friends of improvement, or whose names have been furnished as probable subscribers; and it is hoped they will, not only all become subscribers, but exert their influence to induce others also to do so.

☞ Give us an average of 50 or 60 subscribers to the "Arator" in each county of the State, and we promise to do our *best* to publish the very *best* agricultural paper in the country. A hundred subscribers in each county can easily be obtained. Will not the friends of the cause, in each county, adopt some plan to secure that number and forward to the Editor? A very little effort, that would cost them nothing, would accomplish the object.

ACKNOWLEDGMENTS.

☞ We return our grateful acknowledgments for the kind and flattering notices which our brethren of the press have been pleased to take of THE ARATOR, and for the courtesy of an exchange which many of them have generously extended to it. We should be gratified to exchange with all the papers of our own State at least—a matter which depends, however, upon the option of their conductors altogether.

The Secretaries of all County Agricultural Societies are respectfully requested to send us the proceedings of their Societies for publication in the Arator.

TO CORRESPONDENTS.

We return our thanks for the contributions which appear in the present number of the ARATOR, and hope the friends of improvement in every county will write, and give us their views and experience for publication. It will do great good to themselves and to the public.

NEXT ANNUAL ADDRESS BEFORE THE STATE AGRICULTURAL SOCIETY.

We have high satisfaction in being authorised to announce that the HON. THOMAS RUFFIN has consented to deliver the Annual Address before the State Agricultural Society, at the next Fair. This, of itself, will draw thousands of the plain farmers and mechanics, and all classes of our citizens from every part of the State. A member of the Committee, in communicating to us, for publication, the subjoined letter of Judge Ruffin, consenting to deliver the address, makes the following just and

appropriate remarks, which, tho' not intended for the press, we take the liberty of adding to this notice:

"I take much pleasure in enclosing to you a copy of a letter received from Judge Ruffin, in answer to one addressed to him by the Committee appointed to invite a speaker for the next annual meeting of the N. C. State Agricultural Society. The Judge, as you will perceive, has consented to deliver the next annual address. We have, I think, much cause for exultation in having obtained the services, in this respect, of this most competent and estimable gentleman. Being disconnected, almost, if not entirely, from politics, with a deserved national reputation for eminent talents and all else that can add dignity or respectability to man, his name is a tower of strength to our cherished society."

[COPY.]

Alamance, March 22nd, 1855.

GENTLEMEN: I received in due time your letter assigning to me the duty of delivering the address at the next annual meeting of the Agricultural Society. I had hoped and thought to be free from such tasks for the short remnant of my days, as I ought to be. For at no time of my life had I much turn for such things, and I have less now, being nearly without ambition, with a feeble and cracked voice, and a mind of less vivacity and vigour than formerly. Under those circumstances, your letter really embarrassed me so as to prevent a prompt reply. To tell the plain truth, I kept it by me in hope I could summon resolution to say, No. I feel incompetent to rouse our People to exertion, or to guide their efforts. But as you seem to think I may do some good, and I greatly desire to promote the welfare of Agriculture and the honor and usefulness of the Society, I do not find it in my heart to deny your application, but have concluded to make at least, an attempt to address my brother farmers—fearing, indeed, that you will regret your mistake in making the selection, and begging, in advance, all proper allowance for an imperfect performance.

I am, Gentlemen, with great esteem, your friend and obedient servant.

(Signed) THOMAS RUFFIN.

To Messrs. R. A. HAMILTON,
R. R. BRIDGERS, } Committee, &c.,
R. C. PRITCHARD, }

PENNSYLVANIA STATE AGRICULTURAL SOCIETY.

This institution is represented to be in a most prosperous condition. The State appropriation to the Society is \$2,000 per annum—the receipts at the last Fair \$24,842.32, and the contributions to the State Fair \$2,363. Among the expenditures, for watchmen, police, gate keepers, &c. \$2,059—premiums \$1,895—and Fair and plowing grounds, hay, straw, and lumber, \$10,076.33.

THE PEA AN IMPROVER.

Mr. Hewlet, of Baltimore county, Md., says the American Farmer, has been for a number of years improving with the pea, and considers it a very important means of bringing his land to its present very high condition. He sows upon his corn land and fallows for wheat in the fall. Our farmers will find that the pea—the clover of the South—must form a leading feature in their system of improvement. Sow peas, burn and save ashes, collect materials for manures, make compost heaps, ditch, drain, plow deep, cultivate thoroughly; and if your condition is not improved, we'll give you leave to go to Texas, California, Nebraska, Kansas, or to Cuba, if you please.

PEAS FOR HOGS AND TO IMPROVE LAND.

A correspondent of Granville, says:

"I am very desirous of raising a large quantity of peas for my hogs, and turn the hogs in on them. I lack information greatly upon the proper course to pursue, and should be much obliged for any hints on the subject."

We hope some of our farmers in Johnston, Wayne, Greene, Pitt, Lenoir, Duplin, and other counties, where the pea and pork are raised in abundance, will give us information on the subject, in time for our June number.

At present we can only state, that the common method of raising the pea for hogs, among our farmers, is to plant in the corn fields, gather corn early, and turn in the hogs on the pea. The rule of many is, a hill of peas for every hill of corn, between the rows, eight or ten peas to the hill. If the peas are of a kind which send out a long running vine, (and we have seen a variety of that kind brought from Halifax which we esteem very highly,) four or five peas to the hill are enough. The time of planting is, from the last of May to the 1st of July—some are later getting in the whole crop. They will bear if planted after wheat or oat harvest, but all will not have time to ripen, generally, before frost; for a fallow crop only, to turn under, they are valuable in a stubble field. But to raise peas early for hogs, and it may be done profitably, a field should be put in peas alone; and they should be planted for the two-fold purpose of feeding both the hogs and the land. The pea, with its tap root and broad leaf, gets a large portion of its nourishment from the sub-soil and the atmosphere, and if the vine is turned under, it always improves the soil where it grows. In such a case, we should plant about the 1st of June, and in drills suited in distance apart for the crop intend for that field the next year—if cotton, and the land is poor, 3 feet—

if rich, 3½ feet apart; if corn, the usual distance for that crop. One plowing will answer for their cultivation. They will then soon take possession of the ground, & keep down the grass. As soon as they begin to ripen, the hogs may be turned in, as they will eat none but the ripe ones, if sufficiently abundant to satisfy their appetites. They will continue to eat them as they ripen, until frost, when the vines should be immediately turned under.—Being in drills, this operation is much easier and more perfectly performed, than if grown broadcast—a deep, wide furrow first being opened as close as possible to the row, throwing the slice from the vines, and following it by another with a good large turning plow, throwing the vines in the first furrow, and completely covering them up. Plant in that row the next year, and decidedly good effects will be seen. If small grain is intended to follow the peas, then they should be broadcasted, though they will bear less and be more difficult to turn under. It is a highly interesting fact to us of the South, that the pea is as good a fallow for wheat as clover, it will thrive in land that will not "sprout" clover, and has the additional advantage, of being much quicker in its growth.

It is believed by many that none but pork hogs should be allowed to run and fatten on peas. Will some of our experienced farmers give us information on this point?

SEA WEED.

There are doubtless places on our sea-coast where this valuable material may be obtained.—There are, it is said, seven kinds of it, producing different results. Immense quantities of it are removed from the coast of Scotland and Ireland, and either plowed in at once, or burned for kelp, the name given to its ashes, used in the manufacture of glass. The sooner it is plowed in as a manure, the better. Twice a year, on the Channel Islands, every person is allowed to help himself to as much as he can take away; and the consequence is, all the shores of the islands are then covered with people, and vehicles, vying with each other in collecting and carrying off this treasure. The fertilizing substances in the seaweed, are carbonic acid, potash and soda, lime, magnesia, salt, phosphate of lime, sulphuric acid, silica—those in the largest proportions are potash and soda, from 15 to 40 per cent. and sulphuric acid, from 14 to 31 per cent. Its decomposition is rapid; hence, although a powerful fertilizer, its benefits, like guano, are not long felt. The American Farmer thinks, however, by composting it with rich earths and a due admixture of

plaster, its nitrogen and other volatile properties may be fixed, and it would thus become a *lasting* manure; and so, we believe, would *guano*, if managed in the same way. It is a good fermenter to peat.

THE PEACH TREE BORER.

This is a winged insect resembling the wasp. It deposits its eggs in the bark of the tree at the surface of the ground from June to October. The egg produces the borer, in the shape of a worm, which penetrates the bark at the roots, devours that and the sap wood, finally killing the tree, and comes out in spring in its winged form. A great many remedies have been tried. 1. Low branching heads to shade the ground, are said to keep off the insect. Doubtful. 2. Nails driven in the roots, it is said, forms a salt of iron destructive to the insect, but we should think, equally ruinous to the tree. 3. A peck of air slacked lime or leached ashes to each tree; also powdered charcoal, each undoubtedly good for more purposes than one. 4. The only certain remedy is to remove the dirt, and take out the worm with the knife. 5. Raising hills around the tree before the insect makes its appearance, and removing the dirt at the commencement of cold weather, scraping down to the roots, and leaving them exposed through the winter, and hilling up again the first warm spell in February, if well attended to, is a sure *prevention*. 6. We believe painting the trees about the roots with *gas tar* would keep off the insect. The article can be had, in large quantities, in Richmond, at a trifling cost. Would not the common tar, boiled to a pitch, prove effectual?

CORN FODDER.

We recommend to our farmers to raise corn fodder. Try an acre or more. Prepare the ground well, and if not rich, manure in the drills, $3\frac{1}{2}$ feet apart. Drop the corn 40 to 50 grains to the foot in the drill. Plow it once with the cultivator when four inches high. Cut when in the roasting ear state, and cure like curing tops. It may be raised advantageously broadcast on strong land.

INFORMATION WANTED ON THE PEA.

Will some one be pleased to inform us why hogs, running and fattening on peas, and then becoming poor, either die or dwindle with disease? and why, if they get access to pea fields in January or February, they are killed? Do these results follow? and why?

IMPORTANT NEW DISCOVERY, TO PREVENT MOLES, WORMS AND BUGS, FROM DESTROYING CORN AND OTHER SEEDS.

A discovery, which is likely to be of great importance to agriculture—and carries with it no humbuggery—has been made in France and re-reported to the Agricultural Society at Clermond; which by the way, shows the value and importance of Agricultural Societies, as the medium of collecting and bringing to light useful discoveries and improvements, and of agricultural papers to give early information of them to farmers and others interested. A gardener having painted his hot house with *coal* or *gas tar* as a substitute for black paint, found it drove away all the spiders and other insects that infested the place, and revived a vine that was thought to be dying. He afterwards painted the posts and trellis works in the open air, with the same success. All the caterpillars and other insects completely disappeared. Similar experiments have been made in the vineyards in the Gironde, with the same results. It is a protection to corn and other seeds.

The Southern Planter publishes a receipt from Mr. John G. Turpin, near Petersburg, which he says, all who have used it pronounce infallible, the principal ingredient of which is *gas tar*. To one bushel of seed corn add one gallon of coal or gas tar; stir in the corn until it is well coated and saturated; then take three parts of wood ashes and one of fine salt—unleached ashes are best—mix them thoroughly and roll the tared corn in it, until each grain is well coated. Prepare no more at a time than can be planted in a day. It will save the trouble of replanting & thinning, as it may be dropped to stand. The Planter says the tar may be had in Richmond, at a nominal price—only twenty-five cents for ten gallons, exclusive of the vessel that contains it, which may be selected by the purchaser. Let it be tried in field, garden and orchard. The cost will be little, and the benefit may be great.

MUSHROOMS AND HOGS.

Will some of our experienced farmers answer the following questions: Why do mushrooms, kill hogs? What kinds are poisonous to them? why are they particularly so when the hogs are fed with corn immediately after eating them? What is the remedy? A writer in the Southern Planter thinks that they are a *narcotic*, probably *acro-narcotic*, causing congestion of the brain and spinal cord. Some of our physicians would confer a favor on the agricultural community by giving light on this subject.

SCRATCHES IN HORSES.

A correspondent of the Maine Farmer has successfully tried the following remedy for this disease, which is produced by numerous animalculæ generated by a foul stable, viz. a coat of zincpaint and oil. We have repeatedly tried with success, a remedy suggested to us by Mr. Riley Crawford, of the vicinity of Raleigh—a man of sound sense, and an acute observer—which is simply to beat up finely a quantity of coperas, put it in bags of sufficient size for the purpose, made of strong cloth, and sew them securely around the diseased ankles. Let them remain a few days, and the sores will be healed. The sores should be first washed with strong soap-suds, and the bags put on moist, and moistened at least once a day afterwards. We have never know it fail.

SUCCESSFUL EXPERIMENT WITH PEAS.

A gentleman well known in the South, sowed a field in oats, so poor that it yielded only 7 bushels per acre. As soon as the oats were off, the land was plowed and sowed in peas, which were turned in when at their rankest growth. The next year it was sowed in oats again, and produced fourteen bushels to the acre. They were again immediately followed by peas, and the next season oats, which gave a product of twenty-eight bushels per acre.—This was followed by a 3d crop of peas, and a yield of over forty bushels of oats to the acre. *The land was raised by three coats of peas, from seven to forty bushels per acre.* Farmers, read, practice, improve. This must become an important branch of your system of manuring. Let it be combined with some methodical plan of saving, collecting and applying every material about the premises that will enrich the land, and in four years every poor farm on which the system is adopted and faithfully carried out, will double, and in some instances, quadruple its productions.

ROTATION OF CROPS.—No. II.

Having, in our April number, endeavored to show the importance of a systematic change of crops, we now proceed to offer some reflections on a system which, it appears to us, would be well suited to the farms of North-Carolina generally. We know a better may be devised, and earnestly call upon our more experienced and better informed farmers to favor the public with their views on the subject, through the medium of THE ARATOR.

Our plan, however, is a FIVE YEARS' SYSTEM, EMBRACING FOUR SHIFTS, AND ONE YEAR'S REST, with special reference to our principal products and valuable improver—the pea. We would di-

vide the farm into convenient fields, with sufficient cross fences to separate the small grain from the other portions of the crop, and "*pitch our crops*" so as not to cultivate the same thing in the same field but once in five years; that is to say, we would let the following products follow each other, in the order in which they are named: first, cotton; second, corn; third, tobacco, (manured,) or wheat where tobacco is not raised; fourth, wheat or oats, (to be sowed with peas after the stock have had a week or ten days run in the field to glean the leavings of the harvest—the vines to be turned in, in the fall.) The fifth year rest, and in the fall turn under its crop of grass and weeds. The next year we would commence and carry through again the same succession. If the land cannot be spared, the rest may be omitted.

The advantages of this plan will be considered in our next, and an excellent article in an April number of that valuable hebdomadal, the American Agriculturist, given in support of our positions.

But before closing this number, we will remark, those who raise neither cotton nor tobacco, may find it advantageous to let wheat follow corn, and oats follow wheat. Many are very successful in raising oats after wheat, where they turn the wheat stubble in, in the fall; and they would succeed much better, if they would sow peas soon after reaping their wheat, and turn in the vines when in their highest perfection as a fallow for the oats; and they would do still better to sow the winter oats, which may be seeded any time between the middle of October and the first of January. Early in November we think the best time.—We understand the winter oats were sowed last year on Gov. MANLY's farm, in this vicinity, by the side of a field of equal fertility and condition, which was put in spring oats, and that the winter grew six inches taller and outstripped them in every particular. Sown early, they furnish a fine winter pasture for calves and colts and sheep, and will then make a good crop.

GRASS FOR A PARK OR LAWN.

The American Farmer gives the following as the estimate of R. Sinclair, Jr. & Co., for one acre:

Crested Dogtail, Sheep-fescue, Hard-fescue, each $\frac{1}{4}$ bushel; Red-Top, $\frac{3}{8}$ bush.; Kentucky Blue Grass, $\frac{1}{2}$ bushel; Perennial Ray Grass $\frac{1}{4}$ bushel. White Clover, 4 quarts; the cost of which is \$9.—Ground must be rich, well plowed and harrowed; then sow and roll. If sowed in spring, add $\frac{1}{4}$ bush. of oats.

LIST OF PREMIUMS

TO BE AWARDED AT THE

State Fair to be held at Raleigh,
in October, 1855.

BRANCH FIRST—LIVE STOCK.

FIRST DIVISION.

First Class—Thorough Bred.

1	For the best Stallion over four years old,	\$ 25
2	" 2d " do " "	15
3	" " Brood-Mare " "	15
4	" 2d " do " "	10
5	" " Stallion over 2 & under 4 yrs. old,	10
6	" " Mare " 2 " 4	10

In this class purity of blood being the highest point of distinction, a well authenticated pedigree must, in every case, accompany each animal put on exhibition to compete for any of the above prizes.

Awarding Committee—

Second Class.—Quick Draught and Saddle Horses.

1	For the best Stallion over 4 years old,	\$20
2	" 2nd " do " "	10
3	" " Brood-Mare,	10
4	" 2nd " do " "	5
5	" " Stallion over 2 & under 4 yrs old,	10
6	" " Mare " 2 " 4	10
7	" " Saddle-Horse, mare or gelding,	10
8	" 2nd " do do do	5
9	" " pr. matched Carriage-Horses, raised in the State,	20
10	" 2nd " do do	10
11	" " Single-Harness Horse, raised in the State,	10
12	" 2nd " do do	5

In this class, individual excellence in form, action and disposition, will be regarded as chief points of merit.

Awarding Committee—

Third Class—Heavy Draught Horses.

1	For the best Stallion over 4 years old,	\$20
2	" 2nd " do " "	10
3	" " Brood-Mare over 4 years old,	15
4	" 2nd " do " "	10
5	" " Stallion over 2 & under 4 yrs. old,	10
6	" " Mare " 2 " 4	10
7	" " pr. heavy Draught-Horses, rais- ed in the State,	10

In this class, form, size, and docility, will be regarded as chief excellences.

Awarding committee—

JACKS AND JENNETTES.

IMPORTED.

1	For the best Jack, with approved certificates,	\$20
2	" " Jennette, " "	10

RAISED IN THE STATE.

1	" " and largest Jack,	20
2	" " " Jennette,	10

MULES.

1	For the best pr. of Mules (raised in the State)	10
2	" " single Mule " "	5

Awarding Committee—

SECOND DIVISION.

CATTLE.

First Class—Short-horns or Durhams.

1	For the Best Bull over 3 years old,	\$25
2	" " do " 2 " and under 3,	15
3	" " do " 1 " and under 2,	5
4	" " " Calf,	3
5	" " Cow over 3 years old,	10
6	" " do. " 2 " and under 3,	5
7	" " Heifer Calf,	3

The same classification adopted, and the same premiums offered for Devons.

Awarding Committee—

AYRSHIRES.

1	For the best Bull,	\$15
2	" " Cow,	10

ALDERNEYS.

1	For the best Bull,	\$15
2	" " Cow,	10

HEREFORDS.

1	For the best Bull,	\$15
2	" " Cow,	10

Awarding Committee—

GRADES OR MIXED BLOOD AND NATIVE CATTLE.

1	For the best Bull,	\$15
2	" " Cow,	10

Awarding Committee—

IMPORTED CATTLE.

(Where the word imported, is used, it is understood the animal must be brought from beyond the United States.)

1st	For the best Bull,	\$20
2	" " Cow,	10

Awarding Committee—

WORKING OXEN.

1	For the best p'r Work Oxen,	\$10
---	-----------------------------	------

FAT CATTLE.

1	For the best lot of fat cattle not less than 3	\$10
2	" " " Single fat ox or cow,	5
3	" " " Spayed Heifer,	5

Awarding Committee—

MILCH COWS.

1st	Best Milch cow,	\$10
2	2nd " " "	5

Awarding Committee—

THIRD DIVISION.

SHEEP.

First Class—Merino, Cotswold, and South-down.

1	For the best Buck,	\$20
2	" " " Pen of Ewes (not less than 3)	15
3	" " " " Lambs, " " " "	10

plication for premiums, together with a sample of the grain.

3. The principal object of the Society being to promote profitable cultivation, it does not offer premiums for crops produced by extravagant expenditure; therefore, a detailed certified, account of the expense of cultivation, must be made; the expense of labor and manures stated; and the kind of manure used.

4. The kind and condition of soil; the quantity and kind of seed used. The time and mode of planting or sowing, stated.

Samples of grain and vegetables produced, to be exhibited at the State Fair, where practicable, and also to be sent to the Ex. Com. at Raleigh prior to the meeting of the Committee in December.

5. The grain must either be weighed or measured in a legal half bushel, corn to be measured in the ear, & an average specimen of not less than 20 bushels of ears shelled, cleaned, and weighed or measured, as above, after the 15th of Nov., and the number of bushels thus estimated, stated in the affidavit.

FORMS OF AFFIDAVIT.

_____ County, S. S. — A. B., being duly sworn, says he accurately measured the land upon which C. D. raised a crop of _____ the past season, and the quantity of land is _____ acres and no more. [Signed] A. B.

Sworn to before me, this _____ day of _____, 185 . _____, Justice.

_____ County, S. S. — C. D., being duly sworn, says he raised a crop of _____ the past season upon the land measured by A. B., and that the quantity of grain raised thereon was _____ bushels and no more, (or measured in a seal half bushel as, the case may be,) and that the statements in regard to the manner of cultivation &c. are correct, to the best of my knowledge. (Signed) C. D.

Sworn to before me, this _____ day of _____, 185 . _____, Justice.

Second Class—Agricultural Productions, Raised by the Exhibitor.

- | | | |
|----|---|----|
| 1 | For the best variety of Bread Corn, 1 bush. | |
| | as sample, \$3 | |
| 2 | " " " " Stock " 1 do. do. | 3 |
| 3 | " " " " Wheat, 1 do. do. | 3 |
| 4 | " " " " Oats, 1 do. do. | 3 |
| 5 | " " " " Rye, 1 do. do. | 3 |
| 6 | " " " " Barley, 1 do. do. | 3 |
| 7 | " " " " Rice, 1 do. do. | 3 |
| 8 | " " " " Field Peas, 1 do. do. | 3 |
| 9 | " " " " Sweet Potat's 1 do. do. | 3 |
| 10 | " " " " Irish do. 1 do. do. | 3 |
| 11 | " " " " Cotton, 2 Stalks as Sample, | 2 |
| 12 | " " " " Grass Seeds adapted to the | |
| | South for Hay or Grazing, | 5 |
| 13 | For best specimen of Cotton, 50 lbs. in seed, | 5 |
| 14 | " the greatest variety of the above articles | |
| | raised on one farm. | 10 |
| 15 | " " best specimen of Virgin Dip Turpen- | |
| | tine, half gallon, as sample. | 1 |
| 16 | " " " " Rosin, 10 lbs. as sample, | 1 |
| 17 | " " " " Hemp prepared or dressed, | 3 |
| 18 | " " " " Flax " " | 3 |
| 19 | " " " " Maple Sugar, | 3 |

- | | | |
|----|-------------------------------------|---|
| 20 | " " " " Leaf Tobacco, not less than | |
| | 10 pounds, | 3 |

Awarding Committee—

Third Class—Farm Products.

- | | | |
|---|--|-----|
| 1 | For the best half-barrel Pickled or Mess Beef, | \$5 |
| 2 | " " " " " " " " Pork, | 5 |
| 3 | " " " " ½ dozen Bacon Hams regardless | |
| | of age, | 5 |
| 4 | " " " " " Mutton or Vension Hams, | 5 |
| 5 | " " " " ½ Barrel Roe and Cut Herrings, | 5 |
| 6 | " " " " ½ " " Shad, | 5 |
| 7 | " " " " ½ " " Mulletts, | 5 |

Exhibitors must state in full, in writing, the mode of Pickling the Beef and Pork, and curing and Preserving the Bacon.

DAIRY.

- | | | |
|---|---|--------|
| 1 | Best jar of Fresh Butter, not less than 5 lbs., | 3 |
| 2 | " firkin of Butter 6 mo's. old not " | 20 " 5 |
| 3 | " New Cheese, | 2 |
| 4 | " " " " 12 months old, | 3 |
- The process of making and preserving the butter and cheese, must be given in full by the exhibitor.

FOOD, CONDIMENTS, &c., &c.

- | | | |
|----|--|------|
| 1 | For the best specimen of Wheat Flour, not | |
| | less than 1 barrel, | \$10 |
| 2 | " 2nd " " " do. do. do. | 5 |
| 3 | " " " " Corn Meal, 1 barrel, | 3 |
| 4 | " " " " Rice Flour, ½ " | 5 |
| 5 | " " " " Buckwheat Flour ½ barrel, | 5 |
| 6 | " " " " Oat & Rye meal ½ " | 3 |
| 7 | " " " " Starch from Wheat, Potatoes &c. 5 lbs. sample, | 3 |
| 8 | " " " " Flour Bread 3 Loaves, | 2 |
| 9 | " " " " " Roles ½ doz. | 2 |
| 10 | " " " " Corn Bread 3 Loaves, | 2 |
| 11 | " " " " Honey (strained) ½ gal. | 2 |
| 12 | " " " " " in Comb 5 lbs. | 2 |
| 13 | " " " " Crackers, Soda, (butter, and water,) 10 lbs. | 5 |
| 14 | For the largest exhibition of Jellics, Preserves, Pickles, Jams, Catsups, Syrups, Cordials, &c. &c., made and exhibited by the same individual, | \$5 |
| 15 | For the best specimen of the following dried fruits, not less than ½ bushel, Peaches, Apples, Pears, Figs, Grapes, Plums, Cherries, Whortle-Berries, for each | \$2 |
| 16 | For the largest exhibition of the above dried fruits made and exhibited by the same individual, | \$5 |
| 17 | For the best specimen of Domestic Wine, not less than ½ doz. bottles, | \$5 |
| 18 | For the best and greatest variety of domestic wines, ½ doz. bottles of each variety, | \$10 |
| 19 | For the best specimen of Linseed, Turpentine, Castor, Cotton Seed, Olive, Fennel, or any other variety of Oil, made in the State, and prepared by the exhibitor, | \$3 |

Awarding Committee—

Fourth Class—Horticulture.

FRUITS ADAPTED TO THE SOUTH.

- | | | |
|---|----------------------------------|-----|
| 1 | Best and largest variety Apples, | \$5 |
| 2 | " " " " " Pears, | 5 |
| 3 | " " " " " Peaches, | 5 |
| 4 | " " " " " Quinces, | 5 |

5	"	"	"	Figs,	2
6	"	"	"	Grapes,	2
Fruit Trees suitable for Southern Raising.					
1	Largest and best variety of Apple Trees,				5
2	"	"	"	Pears,	5
3	"	"	"	Peach,	5
4	"	"	"	Strawberry vines,	1
5	"	"	"	Raspberry	1
6	"	"	"	Gooseberry,	1
7	"	"	"	Cranberries,	1

Vegetables.

1	6	Best stalks of Celery,	\$2
2	6	" Cauliflower,	2
3	6	" Broccoli,	2
4	6	" Cabbage,	2
5	2	" Egg Plants,	2
6	"	Variety of Squash,	2
7	"	Peck Onions,	1
8	"	Sugar Beets, Carrots, Parsnips, Turnips,	1
		1/2 dozen of each, for each,	1
Awarding Committee—			

BRANCH THIRD.**MECHANICS (WITHIN THE STATE.)****First Class—Plows, &c.**

1	For the best Side Hill Plow,	\$10
2	" " Double Mould Board do.,	5
3	" " Cast Mould Board one horse do. 10	10
4	" " " " Two do do. 10	10
5	" " Wrought " " One do do. 10	10
6	" " " " " Two do do. 10	10
7	" " " Subsoil,	do, 10
8	" " " Cotton Scraper,	10
9	" " " Sweep,	5
10	" " " Toothed Cultivator,	5
11	" " " Harrow,	5
12	" " Horse Rake,	5
13	" " Iron Roller, smooth,	5
14	" " " Pegged,	5
15	" " Weeding Harrow Plow,	5
16	" " Farm Gate,	5
17	" " and greatest variety of Agricultural implements manufactured in the State, by the exhibitor or under his supervision,	\$25

Second Class—Farm Vehicles &c.,

1	For the best 4 or 6 Horse Road-Wagon,	\$20
2	" " 2 do. do.	10
3	" " 1 do. do.	5
4	" " Horse Cart, (tumble)	5
5	" " Ox Cart and Yoke,	5
6	" " Wheel barrow,	2
7	" " Dumping Wagon,	5
8	Best p'r Wagon or Plow Hames,	2
9	" Cart Saddle,	2
10	" Ox Cart Wheels,	3
11	" 2 Horse Pleasure Carriage,	\$25
12	" Phaeton, Rockaway or Top Buggy	15
13	" Open Buggy or Sulkey, each,	10
Awarding Committee—		

Third Class.—Machinery, (made in the State.)**STEAM POWER.**

1	Best Steam Engine for agricultural purposes, at work on the ground,	\$25
---	---	------

HORSE POWER.

1	Best Sweep Horse Power,	\$15
2	" Railway " "	15

3	" Saw and Grist Mill, Corn and Cob Crusher and Threshing Machine, each,	15
4	" Broadcasting and Drilling Machine, for grain or grass,	10
5	" Broadcasting Machine for sowing Bone dust, Lime, &c., &c.	10
6	" Ditching Machine,	5
7	" Cotton Gin,	20
8	" Reaping Machine,	20
9	" Mowing Machine, for grass,	10
10	" Hay Press,	10
11	" Cotton do.	10

HAND POWER.

1	Best Fanning Mill,	\$5
2	" Corn Sheller,	5
3	" Straw and Shuck Cutter,	5
4	" Corn-Planter or Drill,	5
5	" Wheat do do	5
6	" Shingle Machine,	5
7	" Pump or Hydraulic Machine,	5
8	" Smut Machine,	10
9	" Churn,	5
10	" Sewing Machine,	5
11	" Sausage Cutter and Stuffer,	5
12	" Grain Cradle,	5
Awarding Committee—		

Fourth Class.—Saddlery, &c.

1	Best set Carriage Harness,	\$15
2	" Buggy or Sulkey do.	10
3	" Gents. Saddle, Bridle & Martingals,	5
4	" Ladies' " " "	5
5	" set 4 Horse Wagon Harness,	5
6	" " 2 do do do	5
7	" " 1 do do do	3
8	" Cart Harness,	3
9	" Plow do	3
10	" Halter and Collar or Pad,	3
Awarding Committee—		

CABINET WORK.

1	Best Bedstead,	\$5
2	" Cradle or Crib for Children,	3
3	" Rocking Chair,	3
4	" Half dozen Sitting Chairs,	3
5	" Centre Table,	3
6	" Wash Stand,	3
7	" Sofa or Settee,	5
8	" Wardrobe,	5
9	" Sideboard or Bureau,	5
10	" Desk, Book-Case, &c.	5
11	" Window Sash and Blinds, each,	5
12	" Pannel Door,	5
Awarding Committee—		

SHOES, HATS, &c.

1	Best pair of Gentlemen's Boots,	\$3
2	" " do Shoes,	2
3	" half dozen Brogans,	3
4	" Dress Hat, silk or fur,	3
5	" Plantation Hat,	3
6	" half dozen Wool Hats,	3
7	" Straw or Grass,	2
8	" made Gentlemen's Coat,	5
9	" " do Pants. and Vest,	5
Awarding Committee—		

Fifth Class.—Sundries. [N. Carolina.]

1	Best lot of Guns,	\$5
2	" " Stone Ware, Glass Ware, or Earthen	

	Ware, each,	5
3	" " Cast (hollow) Ware, as Pots, Kettles, &c.	5
4	" " Wood ware, (hollow,) as Buckets, Tubs, Keelers, &c. &c.	5
5	" " Casks, Barrels, &c.	5
6	" " Leather, Sole, Kip and Calf,	5
7	" Side of Harness Leather,	5
8	" Lot of Baskets for farm use,	5
9	" " Tin Ware,	3
10	" " Edged Tools,	10
11	2nd best lot do do	5
12	For the best and largest exhibition of Mechanics' Tools, made in the State,	5
13	Best lot Manufactured Tobacco, Chewing,	10
14	" " do Smoking,	3
15	" " Cigars,	5
16	" " Tallow Candles,	5
17	" " Soap, with process of making,	3
Awarding Committee—		

BRANCH FOURTH.

MANUFACTURES.

First Class.—Mill Fabrics. [N. Carolina.]

1	Best piece 10 yards Broadcloth,	\$ 10
2	" " 10 " Cassimere,	5
3	" " 10 " Sattinett,	5
4	" " 10 " Woolen Jeans,	5
5	" " 10 " Linsey or Kersey,	5
6	" " 10 " Flannel, plain and twilled,	5
7	" pair of Blankets,	3
8	" " Felt Blankets,	3
9	" piece 10 yards Woolen Carpet,	5
10	" Hearth Rug,	5
11	" piece 10 yards Linen, (bleached,)	5
12	" " 10 do do (brown,)	5
13	" " 10 Tow Cloth,	5
14	" " 30 yards Osnaburghs,	5
15	" " 30 " Shirting and Sheeting,	5
16	" " 30 " Bed-ticking,	5
17	" " 30 " Cotton Jeans,	5
18	" Bale Cotton Yarn, (all the numbers,)	5
19	" Cotton Sacking, 30 yards,	5
20	" lot Cotton Twine,	2
21	" " Paper, printing, letter, cap, &c. &c.	5
22	" Coil of Rope, hemp, cotton, or bear grass,	5
23	" Mattress, hair, moss, shuck or cotton,	5
Awarding Committee—		

Second Class.—Household Fabrics.

1	Best Counterpane,	3
2	" Bed-Quilt, (Cotton,)	3
3	" do (Silk,)	5
4	" Home-made Carpet,	3
5	" pair home-made Blankets,	3
6	" Hearth Rug,	3
7	" pair Yarn Hose,	1
8	" " home-made Silk Hose,	2
9	" Woolen Shawl,	2
10	" Foot Mats,	2
11	" piece 10 yards (Negro) Woolen Cloth,	3
12	" " 10 " Rag Carpet,	3
Awarding Committee—		

MISCELLANEOUS.

1	For the best collection of useful Minerals of the State, including coals, Iron Ore, Copper Ore, Limestones, Marbles, Sandstones, Marbles, Peats, Soils, &c.	\$
Awarding Committee—		

OUR FRIENDS INDEED.—To the kind and obliging friends of the cause of Improvement in different parts of the State—especially in Alamance, Person, Caswell, Granville, Franklin, Johnston, Edgecomb, and Camden—by whose personal efforts large accessions have been made to the subscription list of the Arator, we return our most hearty and sincere thanks. We hope by next month to receive encouraging evidence of similar efforts in many other counties.

WE invite special attention to the Letter of Judge RUFFIN, consenting to deliver the Annual Address at the next State Fair, and to the list of Premiums, in the preceding pages; and request all the papers in the State to publish them.

WE To make room for the list of Premiums, we are compelled to defer several editorial articles and much other interesting matter prepared for this number of the Arator.

WE We feel greatly indebted to our friends in different sections of the State, who have accompanied their subscriptions with kind words of encouragement to our enterprise, and may take the liberty to quote from them hereafter.

For the Arator.

GUANO FOR CORN.

Mr. Editor: In your introductory address, you very justly remark that farmers in the interior cannot rely upon foreign fertilizers to improve their farms and increase their productiveness. But from the trials I have made, I think guano, even on corn in poor land, properly and timely applied, will pay, if not permanently improve, any where in convenient distance to any of our rail-roads, especially if the roads, as they unquestionably ought to do, will bring it at a very low rate, say nothing more than the actual cost to them of transporting. I have used it with success, in the manner in which I understand it is used by the Hon. A. W. Venable, on his farm in Granville, that is, at the first plowing after the corn is up, a hand follows the plow that *sides*, turning the dirt from it, and sprinkles the guano in the furrow opposite the hill of corn; half an ounce on each side; and the next furrow, turning the wing to it, covers it up. Last summer, although the drought was very severe, I raised in this way, four barrels of corn to the acre, that would not have brought more than one and a half without the help of manure. The guano, in all cases, should be mixed well with one third as much plaster, or something like that quantity, and it does as well in clay as in sandy land—perhaps better.

PLOW-SHARE.

Red Ridge, April 10, 1855.

UNITED STATES AGRICULTURAL SOCIETY.

This Society held its annual meeting in Washington City on the 28th of February, Col. WILDER, the President, in the Chair. A resolution was adopted objecting to free trade for Agriculture and protection for other interests. Also resolutions calling an Agricultural convention of delegates from each State,

to establish an agricultural platform, said convention to meet on the Friday following the next annual meeting of the National Agricultural Society, which will be the second Friday in January next. A number of able reports were presented, and addresses delivered. The following is the list of officers elected, for 1855:

President, MARSHALL P. WILDER, of Massachusetts.

Vice-Presidents—John Lang, Maine; H. F. French, N. H.; Fred. Holbrook, Vt.; B. B. French, Mass.; J. J. Cook, R. Island; John T. Andrew, Conn.; Henry Wager, New-York; Isaac Cornell, N. J.; Isaac Newton, Pa.; C. P. Holcomb, Del.; H. C. S. Key, Md.; G. W. P. Custis, Va.; Henry K. Burgwyn, N. C.; James Hopkinson, S. C.; D. A. Reece, Geo.; A. P. Hatch, Alabama; J. D. B. DeBow, Louisiana; Geo. Whitfield, Kansas; J. T. Worthington, Ohio; R. Gratz, Kentucky; M. P. Gentry, Tennessee; Jos. Orr, Indiana; J. K. Kinnicutt, Ill.; Thos. Allen, Mo.; T. B. Flournoy, Ark.; J. C. Holmes, Mich.; Jackson Morton, Fla.; T. G. Rusk, Texas; J. W. Grimes, Iowa; B. C. Eastman, Wis.; J. M. Horner, Cal.; Jos. H. Bradley, D. C.; S. M. Baird, New-Mex.; H. H. Sibley, Minn.; Jos. Lane, Oregon; J. L. Hayes, Utah; Mr. Giddings, Nebraska.

Executive Committee.—John A. King, N.-Y.; C. B. Calvert, Md.; A. L. Elwyn, Penn.; J. Wentworth, Ill.; B. Perley Poor, Mass.; A. Watts, Ohio; John Jones, Del.

Secretary—William S. King, Boston, Massachusetts.

Treasurer—B. B. French, Washington, D. C.

THE NUTRITION OF PLANTS.

"Blue Ridge," in the April number of the American Farmer, shows that water is the medium through which all nutritious materials are conveyed to plants, and that this liquid is absorbed by the roots of vegetables in proportion as it is limp. There are many substances thus introduced into the growing plant, which are unnecessary and injurious, and this accounts for some of the diseases to which, as is known, they are subject.—They are, however, provided with the means of casting off unnecessary or injurious substances.—This is done by the power of the leaves and roots, mainly; but it cannot be doubted that the whole plant is provided with pores, like the human system, through which redundant and useless particles are voided. This office is, however, more especially assigned to the roots, which confirms the opinion which we advanced in the April number of the ARATOR. The excrements thrown off by the roots, the writer thinks, not only become prejudicial to the plants that have produced them, showing the necessity of cultivating such a succession of plants as are suited to each other, but account for the antipathies that certain plants have for others, and which are so strong as to forbid their being cultivated together. These are important facts, which furnish matter for profitable inquiry and reflection to every practical farmer.

REMEDY FOR GALLS.

Maj. Long, in his expedition to the Rocky Mountains, found white lead moistened with milk, the best remedy he could apply to saddle or harness galls.

ANOTHER REMEDY FOR GALLS AND LICE.

Mr. George D. Cates, in the Boston Cultivator, states that he has proved New England Rum the best remedy for lice in cattle he has ever tried.—Two applications are invariably effectual. A pint applied with a sponge, is enough to kill all the lice on any cow or ox. It is also an excellent remedy for hurts, galls, lameness, sore teats, of all kinds of animals, and is improved by a mixture of camphor.

LIME must be thoroughly mixed with the soil to be useful: hence, the land should be well plowed and harrowed before the lime is spread, and then the lime should be lightly harrowed in.



THE

"ADAMS EXPRESS COMPANY."

MERCHANTS and others having Goods to ship, will find it greatly to their advantage to consign them to the care of this Company. The well known responsibility of the Company is a sufficient guarantee against all losses. Having obtained unlimited privileges over all roads connecting this with the Northern Cities, patrons may rest assured of having their Goods transported at mail speed.

Notes, Bills, Drafts, etc., etc. collected, and remittances promptly made at all places where the Company has Agencies.

J. B. EZELL, *Agent*,
Raleigh.

Office FAYETTEVILLE ST.

1-tf.

NORTH-CAROLINA JEWELRY STORE.

A large and general assortment of Watches and Jewelry of every description, will be found at the North-Carolina Jewelry Store, on Fayetteville Street, Raleigh, two doors south from Mr. Turner's Book-Store. The subscribers call special attention to their fine lot of the REAL Church Street Joseph Johnson Gold Hunting case, 19 Jewelled Watches—decidedly the best Watch made.

ALSO—The latest style of Cameo and other Breastpins, Ear Rings, &c.,

PALMER & RAMSAY.

Raleigh, April 2, 1855.

1-3t.

New Arrivals! Spring & Summer Goods.

For 1855.

T. R. FENTRESS hereby tenders his sincere acknowledgments for the very liberal support heretofore given him by his patrons and friends in the City of Raleigh & vicinity, and the citizens of the State generally, who have favoured him with a call, and hopes to merit & receive a continuance of those same favours, by prompt attention to the wants of those who may require his services. He may always be found at No. 15 Fayetteville Street, RALEIGH, N. C., where he is prepared to furnish any and every article of Gentlemen's wearing apparel, at a reasonable notice, made up in *his own establishment*, in the most approved style.

He respectfully calls the attention of all, to his stock of **SPRING & SUMMER GOODS**, which are just being received from N. York, and which are as fine and durable as can be bought in that place, and will be sold at such an advance on cost as will suit the times and enable all who wish to *encourage home manufactures*, and get really good clothing, an opportunity to do so, and not to be deceived by *Northern ready made Clothing* as they can purchase on as good terms and a more lasting articles, for the same money.

He has also a stock of **READY MADE CLOTHING**, which he is desirous of closing up, and will sell at a small advance above cost. Call if you want cheap Clothing.

Paris and American fashions for Spring and Summer of '55 just received.

All persons indebted to the subscriber, will please call and settle by Cash or Note, as his last six months business falls due the first day of April, 1855, and the accounts bear interest from each term.

Register, Standard, and Spirit of the Age insert 4 times. T. R. F. 1-tf.

Eureka! Eureka!—I Have Found It!

THE Subscriber begs leave to announce, that having constructed an **APARATUS WHICH MAGNIFIES A DAGUERRETYPE TO A FULL LIFE SIZE PORTRAIT**, and reflects **THE SAME UPON THE CANVASS**, I am enabled to paint a **PERFECT LIKENESS** in about half the time it has heretofore required, and that, too, from only two or three short sittings. With this advantage, I can afford to paint **PORTRAITS** for a much less price than hitherto, and have accordingly reduced my charges to

\$25 for Life Size Portraits;
\$15 for Half Size;
\$10 for Small Heads.

With this assurance on my part, I flatter myself that a generous public will continue to bestow a liberal patronage.

Persons wishing Portraits from Daguerreotypes, have only to see my present mode of copying them, to be convinced that a perfect copy can be made.

The subscriber will visit the country, if desired to do so, for the purpose of painting families.

O. P. COPELAND.

Raleigh, March, 1855. 1—tf

A. T. S. H. YOUNG'S, No. 21, FAYETTEVILLE Street, may be found a choice lot of **SPRING AND SUMMER GOODS** for Ladies and Gentlemen's wear.

Also, prime Molasses, Rice, Sugars, Coffee, &c. All will be sold at low prices. Call and see.

Raleigh, March 26, 1855. 1-tf.

Star and Spirit of the Age copy.

Office of the Neuse Manufacturing Co., } RALEIGH, N. C. }

H. W. HUSTED, Pres't; E. B. FREEMAN, Treasurer.

THIS COMPANY will pay CASH for all Cotton and Linen **RAGS** delivered at their Paper Mills at MILBURNIE, six miles N. E. from Raleigh. The Planters of the country are urged to have the Rags, now wasting on their plantations, saved and sold. It will add much to the comforts of their slaves; and will cost but little care. We want 700,000 lbs. per annum. 1-tf.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,

Extracts for Flavoring,
Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

A. M. MCPHEETERS, H. GHISELIN. J. W. MARTIN

A. M. MCPHEETERS & CO., WHOLESALE GROCERS,

Forwarding and Commission Merchants,

6 ROANOKE SQUARE,
NORFOLK, VA.

REFERENCES.

Thomas P. Devereux, Halifax, N. C.

G. W. Mordecai, Pres. Bank of the State of N. C.

C. Dewey, Cashier do do do

W. H. Jones do Branch do Cape-Fear, Raleigh.

L. O'B. Branch, President R. & G. R. R.

Messrs. Reid & Soutter, }

Dr. N. Whitehead, }

President Farmer's B'k of Va. }

Alex. Bell, Esq. }

Messrs Spence & Reid, Baltimore,

" B. Blossom & Son, New York.

1-tf.

JOB PRINTING.

The Editor of The Arator is prepared to execute Job and Book printing in handsome style, and will be thankful for that kind of patronage.

E. L. HARDING.**Clothing and Furnishing Goods.**

NOW RECEIVING a large and desirable stock of **SPRING AND SUMMER CLOTHING**, with a well selected stock of **GENTS. FURNISHING ARTICLES**. Our facilities for *buying cheap*, and having our goods *made up* under our own eye, makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2t

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of **Agricultural Implements** and **Farming utensils**, **Field seeds**, **Fertilizers**, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: **Horse Powers**, **Wheat Fans**, **Corn Drills**, **Field Rollers**, **Corn and Cob Crushers**, **Harrow**, **Cultivators** and **Plows** of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

no. 2—tf.

W. L. POMEROY,**PUBLISHER,****BOOKSELLER & STATIONER,**

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including **RECORDS** for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.**NORFOLK MARKETS.**

REPORTED BY

A. M. MCPHEETER'S & Co.

No. 6 ROANOKE SQUARE.

Flour.—In quick demand and light supply, though prices have receded somewhat from the highest point. We quote S. F. \$11¼ a 11½; Extra \$11¼ a 12; Family 12¼ a 13.

Corn.—Transactions have been limited for the past 2 days. Last sales, mixed \$1; yellow \$1.02½ a \$1.03.

Cotton.—The market is without much animation, though holders are firm at 8¼ a 9c. Most of the sales made are at the former figure.

Naval Stores.—Tar is in rather better demand with sales 1 a 2000 Brls a \$2.—Spirits Turpentine 40 a 41. Rosin \$1.38 a 1.75 according to quality.

Bacon.—N. C. & Va. hog round 10¼ a 10¾; Hams 11½ a 12½; Western Sides 9½ a 9¾; Shoulders 8½ a 8¾.

Lime.—Thomastown, scarce, a \$1.15 a \$1.20; W. C. \$1.25 a 1.31.

Salt.—L. B. \$1.75 a 1.80; G. A. \$1.40 a 1.45.

Herrings.—No N. C. in market.—Nova Scotia, cut last years inspection—sound, may be quoted a \$4.50
Staves.—R. O. hhd. are dull a \$27 a 30; W. O. hhd. \$55; Pipe 65.

Guano.—The market is well supplied with Peruvian. Prices as arranged by Government Agents 46 a 48, for ton of 2000 lbs. according to quantity purchased.
A. M. MCPHEETERS & Co.

April 28, 1855.

MARKETS.

RALEIGH.—Corn, 1,00 @ 1,10; Bacon Hams, 10½ @ 11; Hoground, 9 @ 10; Flour, 9,50 @ 10; Meal 1,00 @ \$1,15; Fodder, \$1 25 @ \$1 50; Oats, clean, 50 @ 60; Butter, 25; Lard, 10 @ 11.

Flour is in demand, and would meet with ready sale.

FAYETTEVILLE.—Corn, \$1 @ \$1 10; Bacon, 9 @ 10; Cotton, 8 @ 8½; Flour 9 @ 9½.

WILMINGTON.—Bacon, 0; Cotton, 8½ @ 8¾; Turpentine, yellow dip, \$2 60, Hard, \$1 60; Spirits, 40c.

PETERSBURG.—Bacon, western sides and shoulders, 7 @ 8½; Cotton, 8 @ 8½; Corn, 1,00 @ 0; Flour, 10 @ 13½; Tobacco, lugs, 4½ @ 6½; leaf, 6½ @ 12; Wheat, \$1 30 @ \$2 20; Mexican Guano, \$35; Peruvian ditto, \$50.

* This quality Flour is manufactured at the city mills, and is considered a very superior quality of Family Flour, which accounts for its extra high price. The prices are regulated by the grades "midling," "fine," "superfine," "extra," and "family flour." It is a rare thing that any, except "city mill" flour, ever reaches the grade of best "family."

TABLE OF CONTENTS.

Acknowledgments,	53	Farm, a Little well &c. 35
Address of Mr. Cameron,	36	Farmer, a N. Carolina, 43
Causes of zeal &c.	36	Fruit Trees & Bees, 52
Things essential,	37	Galls, remedy for 62
Satisfied People,	37	Grass for a Park, 56
The Age of Gold,	37	Guano for Melons, 48
Agriculture Safe,	37	— for Corn, 61
Other Pursuits,	37	Ink, to remove, 48
Little Things,	37	Invincible Horse Bit, 44
Picture of Orange,	38	Information wanted, 55
Edgecombe Farm's,	38	Lady Millicent, 49
Self-Improvement,	38	Low-headed fruit trees 47
Educating the heart,	38	Mulching with shavings 47
Self-made Farmers,	38	Mushrooms, 55
Agricultural reading	39	New Discovery, gas tar 55
Soils to Crops,	39	New Manure, 52
Prote'n ag'st drouth	39	Peach Tree Borer, 55
Improving Soils,	39	Pea an Improver, 54
Altering colts, pumps,	51	— for Hogs &c. 54
Agricul. Soc. U. S.	61	— successful experiment with, 56
Annual Address, Fair,	53	Penn. State. Ag. Soc. 53
Asparagus, Giant,	46	Poultry, Hints about, 50
Apples, American,	47	Premiums, List of 57
Boot & Shoe Manufac'y	51	Proce'gs of Ag. Soc's 53
Butter, how to pack,	48	Reading to Profit. 34
Bread, rice & wheat,	48	Rotation of Crops, 56
Corn Fodder,	44	Scratches in Horses, 56
Clover & Crab Grass,	50	Sea Weed, 54
Coughs and Colds,	44	Silk, to keep, 48
Cranberries,	46	Stock and Scions, 47
Correspondents,	53	Strawberry Culture, 45
Draining Lands,	41	Sun-Flower. 44
Drouth, protection &c.	50	Swine, Management of 43
Eggs, to preserve,	48	Subscrib'wanted, &c. 53
Farming a Science,	33	Vinegar, to make, 4

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, JUNE, 1855.

NO. III.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, in advance, or, \$1,50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines, for each and every insertion, one dollar—containing more, at the same rates.

[We are indebted to the polite attention of one of the most intelligent and successful farmers of this (Wake) county, for the following valuable plan of hill-side ditching, which he clipped from a paper, tried, and found to be easy of execution, cheap and efficient. We hope our readers will follow his example. One of the first and most important steps of improvement, is to arrest the washing of our land; and all who will adopt this plan, will soon learn its value, and acknowledge the usefulness of agricultural papers in spreading such valuable information.]

Selected for the Arator.

From the Milledgeville Recorder.

HILL-SIDE DITCHING.

BY CAPT. HARDWICK.

By the urgent request of many of our subscribers, we re-publish in this number of the Supplement, the article of Capt. Hardwick on Hill Side Ditching, which was written for and originally published in our agricultural sheet.

The country owes a large debt of thanks to Mr. Hardwick, for the improvement of its lands, which has been induced and so much aided by his practical and successful method, as pointed out in the article before us. We have in our possession an-

ple testimonials in this regard. And we feel it to be our duty to that gentleman, and one which we perform most cordially, favored as we were by being made the medium of its communication to the public, not only thus publicly to express our obligations to him, for useful labors in behalf of the great interest of the country, but likewise to publish at least one of the many manifestations of public gratitude, on the part of those who have tested and been benefited by those labors. And we select the testimony on this behalf of an agriculturist, who is widely known as one of the best farmers and planters, in this or any other country; one who is considered in the large sphere of his acquaintance as a specimen planter, whose example if followed will assuredly be beneficial. Without further comment we publish below the letter on this subject from Mr. Lawson of Houston county, although not written for the public eye, than whose testimony on the subject of all relating to successful agriculture, there is none superior. Who is public spirited enough to second the proposition of Mr. Lawson?

HOUSTON Co., April 25th, 1851.

Messrs. Grieve & Orme:—I consider R. S. Hardwick's letters on grade ditches and horizontal plowing, decidedly superior to anything I have seen on that subject. Grade ditches and horizontal plowing, I regard, as the greatest improvement of the age, about which, I know anything. Mr. Hardwick is esteemed a public benefactor, and worthy of a monument. But I would a little rather show my faith by my works, while he is living, than af-

ter he is dead. It is very rare, that a public benefactor is rewarded. I am willing to be one of a company, of a hundred, or of five hundred, who will give a hundred dollar bill each, to raise a fund subject to his order. My farm is worth double, yes, treble, what it was, and I am debtor to Hardwick for it. I did not think of saying any such thing, when I took up my pen. But I do look on Mr. Hardwick as a public benefactor, and think he should be rewarded. My object in writing you is to request of you two dozen copies of Hardwick's letters on grade ditches and horizontal plowing.—Send them by mail to Hawkinsville.

Yours truly,

H. LAWSON.

From the Recorder Supplement.

To AUGUSTUS HOWARD Esq.

Dear Sir:—Before the receipt of your letter of the 19th May, I had promised the editors of the Recorder, at their special request an article for the July supplement on the subject of graded hill-side ditches and the horizontal method of culture.—From their letter requesting an article on that subject, it is obvious that I was selected because of the article over my signature published in the April Supplement, finding fault with many of the systems now practiced by farmers on that subject—alleging that various inquiries were made of them, induced by that article, which it appears, was the cause of your inquiries being made. Being under the promise that I was to the Editors, and finding your letter asking information of the same sort, I determined to have your letter published and answer it through the same medium. By this course I could comply with your request and fulfil my engagement with them at the same cost of labor that it would take to answer one. To reply to your inquiries fully in one communication, would require more space than the Editors could well spare in one number; therefore I will continue my letters to you monthly until I have fully answered all your interrogatories.

Thus, sir, you have my reason for the publication of your letters without your consent, which I hope will be a satisfactory apology on my part for the liberty taken.

That I may the more fully explain the system on which I am about to write, and the more readily be understood by you and others who may be desirous of information on the important subject of graded hill side ditches and the horizontal culture, I will begin with the A B C of the method of operation.

The first thing then is the construction and de-

scription of an instrument absolutely necessary to lay off the work correctly—the opinion of many that they can lay off as good a ditch or run as level a row, by the eye to the contrary notwithstanding. Take two strips of plank, 1 inch thick, 3 wide, and 8 feet long, put them together at one end by letting them into each other at such angle as that the other ends will be just twelve feet apart from outside to outside. Take two other strips of the same width and thickness, and of sufficient length, and let the end of one into the side pieces one third from the top or crown, and the other end one-third from the foot of the opposite or other side piece. The other piece must be let in the same way from the opposite side piece, which will cause them to cross each other, where they must be let in to each other—the whole put together with inch serews, firmly. Then draw a line from the outer corner of the foot of the other mark and saw off. This will make the instrument flat on its feet when raised up on them. It would be well to put on to the side pieces at each foot, a strip one inch thick and as long as the foot is wide and even with the bottom to keep the instrument from sinking in the ground where it is soft. The instrument now being complete—all but having the level and grade block attached to it—should have two good coats of paint to protect the wood from the influence of the weather. Then procure a carpenter's spirit level, such as they use in leveling sills and plumb-ing walls. Attach one end of it to the cross piece by means of a screw; then place your instrument on the ground as nearly level as you can judge by the eye, bring the other end of the level on the other cross bar, up or down until the vacuum or air bubble in the tube stands in the middle or centre. Then firmly grip the level to the cross bar with the hand, or a hand vice which is better, carefully mark the feet of your instrument and change the ends, being careful until the feet precisely on the same ground they stood on before. If the air bubble in the tube stands at the same place, you may be certain having a perfect level. Should you not have the true level—and it would be an accident if you did—you will move the end of the instrument on higher or lower ground, as may be indicated by the bubble until the vacuum or air bubble in the tube stands one half the distance between the true level point and the point that it occupied after the feet were first reversed; thus you will continue to change until the air bubble in the tube will stand at the same point with the ends reversed when you may be sure of having the true level. Then firmly secure the end by means of a screw as in

the ease of the other end. A better plan for attaching the level to the instrument is by a box, that will just receive the level, and attach the box just as I have directed for the level, with the level in it, because you can more conveniently take out the level for other purposes, than to unscrew it from the cross bar, by having a hole in the bottom of the box through which you can raise it out with your finger.

Having got the true level, it is now necessary to get the grade for your ditches. To do this, you will take a block just as broad and long as the foot of your instrument and as thick as you want your grade in 12 feet—say 3, 4, 5, or even 6 inches, if you want your water to run so fast as to keep out of the way of that which is coming on behind—and attach it to a strip of the same width and thickness of the side piece, and some 12 inches long, at such angle to the block as will make the strip thus attached to the block run up & be even with the top and bottom edge of the side piece when the block is placed under the foot of the instrument. This strip with the block attached should be firmly screwed on to the side piece, and you have a farmer's level ready graded for running your ditches. This minute description of the farmer's level I deemed necessary as many are using very clumsy instruments, with plumbballs, very incorrect, especially in windy weather, and as one third more work can be done with the one than the other, and with double the ease to the operator.

The instrument or level as I shall now call it, being ready all out setting on the proper grade, brings up that question on which there is such a diversity of opinion, varying from three to six inches in twelve feet. In the discussion of this point, I take this position as incontrovertible: that the true grade is one that will bear off the water without breaking over the ditch or washing it any deeper. For if the grade is so great the ditch continues to wash deeper by every heavy rain, it will have soon to be considered a gully, and treated accordingly. By this rule every one can determine the proper grade for himself. More than ten years experience has confirmed me in the opinion that the grade that I give to my ditches is the true one, and that a material departure either way will prove mischievous. Slight variations either way, will make very little perceptible difference.—It is safer, however, to depart slightly on the side of a greater grade than on the side of too little.—Because, in the one case your ditch being incapable of carrying off the water, must break over.—

While in the other case, the mischief that accrues is only the washing of your ditch. A very good and substantial reason why the grade should be no more than sufficient to bear off the water is, that the less the declension or grade of your ditch to answer the purpose for which you intend it, the better it will encircle the hill, and thereby protect more of the land which it was designed to do. In other words, suppose you have a ditch to run 300 yards long, it will take 75 strides of your level to run it; and by calculation, you will find that the mouth of your ditch will be just 18 ft. & 9-12 lower than the beginning point. But again suppose by way of experiment that you change your grade from 3 to 6 inches and go to the same starting point and go the same distance 300 yards; by calculation, you will find that the mouth of the ditch will be 37 feet, and 6-12 below the starting point. This difference in the grade of your ditches, if the grade of your land was only moderate, might make the mouths of the ditches, as above spoken of from fifty to an hundred yards apart, from which you will readily perceive, if you should select the six inches as your grade, that all the land between the points where those two ditches would run would be unprotected, supposing that to be the first ditch and nearest the top of the hill. I will now, sir, leave this branch of the subject with you, to judge whether I have sustained myself in the position set out with.

The grade given to my ditches is 3 inches in 12 feet on porous soils that absorb water freely, and $3\frac{1}{4}$ to stiff argillaceous soils that absorb water less freely— $3\frac{1}{4}$ and $2\frac{1}{2}$ 1 would put down as the very highest point. I have one field $3\frac{1}{4}$, and I find that those ditches wash deeper, but it would take several years for that grade so to deepen the ditch as to make it mischievous. I have found that the grade given to my ditches succeeds well when other things are done as they should be of which I am hereafter to speak.

Having gone through with the question of grade, and given the one used by myself, the use of the level is next in order. The level being ready, with the grade block screwed on the thickness you intend to have your grade you will take it to the field intended to be ditched, accompanied by a small boy with a hoe suited his size. The operator should first take a general view of the field and get as well in his mind as possible the variations of the hills and the common undulations of the land, and then approach the highest point and examine round the hill from 30 to 75 yards, in proportion to the fall, to find out where the first col-

lection of water will take place. This you can judge of by the breaks or undulations of the surface. Having determined that point, you of course will start your ditch a few yards below that point, sufficiently near to catch the water before mischief can be done the land. You next determine to which side of the field you will carry the water; and that done, you place the level with the end that has the grade block on it in that direction and continue to move one or the other end up or down hill until the air bubble stands in the centre of the tube; you then have a grade precisely the thickness of the block; for the level being perfect before the block was put on and the block now being on, and the air bubble standing in the centre, shows conclusively that the land on which the block stands is just the thickness of the block lower than the other foot of the level. You then direct your boy to dig a small hole just in front of the forward end of the level as a sign to show where the level stood. The level is then moved forward in either direction that you may please to go and the hinder foot is carefully placed where the front one stood, and you look to the air bubble in the tube to see if it is right, if not, you move the forward end up or down, as may be necessary, until the bubble stands at the centre, when you order your boy to dig, and move on as before until you gain the end. You then, return to the beginning place and run as before, taking care not to turn your level round unless you should want to change the direction of the water and throw one half out at one side and the other half, at the other, which I invariably do if it is practicable. Just here, I will remark, that all new beginners are apt to select some point at which they want to discharge the water of the ditch, and are apt to force the level up or down, as the case may be, to gain the point. This is wrong. The level should be allowed to select its own point, after you start, which it will always do better than the operator, if properly managed. Again by forcing the level, sometimes up and then down, in the same ditch in order to gain points to suit the views of the operator, mischief is apt to accrue when heavy falls of rain have to be encountered, by water passing faster where the grade is increased than where it is decreased, so that the water in the parts of the ditch where it moves slowest, is crowded on by the water from the part where it has more grade and moves faster, & thereby endangers the ditch. Once broke—and mischief ensues to the land below; hence it is important that the grade should be kept as perfect as possible. Again, some operators are so tenacious

of the coming out point, or the point, where they want to empty their ditch, that they frequently make that, the starting point, and they about as frequently, have a ditch where it does no good.—The first ditch having been laid out, you move down the hill from 50 to 100 yards, regulating the distance agreeably to the fall of the land and the probable chance for water to collect so as to wash the land, and there select another starting point as in the first case, and run as before. Thus you continue on until the field is finished. It may not be amiss to remark that more depends on the judgment of the operator in the starting point for his ditch than anything else; for if you start at the proper place, and manage the level properly, the balance will be sure to be right. In selecting the starting point, the only guide is your judgment, and when you find a place that you feel satisfied water will collect and wash the land below be sure to make that a starting point—or rather a few yards below, and throw your water in whatever direction may best suit the circumstances of the case.

The next thing to be considered is the opening of the ditches and the implements necessary for doing it. The first thing needed is a scouter plough, horse and boy, and as many hands with weeding hoes as you may think necessary or proper to operate with. You will start ahead of the horse, directing the ploughman to follow you, taking care to follow carefully the chops in all their meanderings, directing the ploughman to do the same. This is important that your grade may be kept perfect. Three furrows are run with the plough, the two last on the upper side of the first, and just near enough to brake the ground into each other. The hands with their hoes then serape out the dirt on the lower side. On soft land this is sometimes sufficient, where the land lies pretty well; but usually, I run three or four more furrows in the bottom, not so deep however as the first and take that dirt out. In the last operation, I usually put behind a hand of the best judgment, to finish off the ditch, preferring to have the ditch rather wide than deep, concave in the bottom with the deepest part nearest the upper side, so the weight of water will not be against the embankment made by the dirt taken out of the ditch. That part of the ditch occupied by the water is usually about two feet wide and 6 to 10 inches below the common surface of the ground; but to take a level from the embankment below is from 16 to 20 inches to the bottom. In middle Georgia it is not unfrequent that the operator comes in contact with gullies

—they are however very easily overcome. The gully must be first filled up with rock, pine bushes or poles even with the bottom of the ditch and sufficiently up and down the gully as to go well above the ditch, and well below under the embankment. This being done, the whole should be covered with dirt, & then the embankment raised below the ditch by digging dirt from above and on the side of the gully that the water goes off on, until it is sufficiently high. It would be well to protect this part of the embankment by placing stones in it if you have them convenient. Thus the operator may go on until the ditches of the field are completed. Should stumps or trees be in the way of the ditch, it is best to take them up; but if the operator is careful he may pass them while running the ditch, by forcing the level below so as to pass without injury. Operators will find the land in better order to ditch or level, after stubble than other crop, as the surface is smoother.

The next thing is to level the field, or rather to lay off the rows horizontally or on a level. To do this, the operator will detach his grade block, and with his level and boy, return to the highest point of the field. Within a few yards of the apex or highest part, at either side or in the middle—I usually take the middle as I can better judge of the land each way—start your level, having the boy to dig the holes as before at each set of the level. If you begin in the middle of the field, you must return to the beginning place and run the other end out. That row being done you move off from that row 20 to 50 yards being governed in the distance by the fall of the land; if very abrupt the distance should be less, but if a very gentle declivity it may be increased. Thus you may continue on until the field is all laid off. In laying off those rows which are technically called “guide rows,” no attention is paid to the ditches; whenever you approach one, cross it as if it was not there. A guide furrow or two being laid off, you may start your ploughs to bedding, and both operations may go on at the same time.—Having a few guide furrows run off as above referred to, you will start on the chops of the first row followed by your principal plough man, and thus run out three or four of the guide rows. The ploughman then returns to the upper side of the first guide row, & with a reed or small stick in his hand as long as the width of your rows, and proceeds to run parallel thereto, regulating the width by the stick which he will very soon do with great accuracy.—Thus he continues on until all the land is laid out above the first guide furrow.—Meanwhile another boy, with the same sort of a plough, a scouter, is following on,

running one furrow always on the lower side, running first right and then left, sufficiently near to break the ground perfectly into the track of the other or first furrow. The reason for this second furrow is obvious when you reflect that a good turning plough, such as Freeborn's, No. 11½ will turn the dirt so far over a single furrow that in returning you cannot break the ground perfectly into the first furrow run. It therefore becomes necessary that your land may be perfectly pulverized through, and especially in the centre of the bed where you intend to plant your crop. Having finished above the first guide row, the principal ploughman comes down to fill the space between that and the second. As in the case above, he starts in below the first guide furrow—followed by the other boy as before, running the second furrow always on the lower side, and runs parallel to it, governed in the distance by his stick, as before, until he runs three or four furrows—governed in the number by the distance of the guide furrow below—then he shifts to the upperside of the guide furrow below, and continues to run as many furrows as were run to the one above. By this time the parallel rows will more than likely approach each other on that part of the ground that is most abrupt, and leave one or more places where the ground is more level, not laid off or filled up, as it is technically called.—The balancee must be filled up with short rows on that side which should seem to be the best level to the eye of the ploughman. Meanwhile the other ploughs may go on bedding up, by running the first furrow on the lower side of the row, or a furrow, run for the purpose of bedding to, & returning on the upper side of the same row or furrow and thus continuing on until one half the middle is taken on each side. The necessity for running the first furrow on the lower side is obvious to every ploughman.—It is because having an open furrow to turn the furrow slice into, the resistance that would be otherwise offered to it by turning up the hill, is removed, while returning on the upper side, the plough having the advantage of turning the furrow slide down the hill is enabled to lay the dirt up much better than if it was turning up hill, without the advantage of an open furrow to receive its furrow slice. Thus the operation moves on until the field is completed, without any regard to the ditches, other than to prevent the ploughs from dragging or discharging their dirt in them as they cross them. The operator or manager may be somewhat surprised at his guide furrows, at one end or at some point in the field coming much nearer together at one point than another. This not unfrequently occurs, and always does, where the same

level passes over ground that is a steep hill and at some point, over that which is comparatively level. In cases of this kind much judgment is to be exercised by the man that is filling up, and it not unfrequently requires the judgment of the operator or manager and sometimes the level, to know on which side to throw in the short rows, for the great object is to keep your rows as level as possible.

I am aware of the great objections that many have to the short rows that necessarily occur in the horizontal cultivation; to these objections I will reply at the proper place. It will be proper, however, to make one or two remarks, showing how time may be saved in plowing those short rows, without dragging the plough from where a bunch of them may be finished in the middle of the field, if you please to end to begin the next row. And just here I will remark, that the crop is plowed in the same way that I have recommended for the bedding of the land, by running the first furrow on the lowerside of the row, and the returning furrow on the upper side.—Now to the short rows.

A hand having started at the end on the row next to the one just finished, in returning on the upper side he finds a bunch of short rows above him, he however goes on until he is going back with his last furrow. When he gets to the end of the first short row he stops and plunges it; when it is finished on arriving at its end without stopping his horse he throws over his plough to the place from which he first turned round, and carries the furrow on until he comes to the end of another short row; he turns and ploughs that and so on until all are ploughed; he then throws his plough over as before and gains the end at his proper place.

I have now, sir, gone through with the description of the level, the manner of using it in laying off the ditches, of opening them and the guide rows, the manner of filling between, and the method of ploughing or bedding them, which ends the chapter on these subjects. I hope I have made myself understood; but if I have not, all that you have to do, is to interrogate me as to that particular point, point out clearly the difficulty that seems to be in the way, and I have no fears but that I can explain fully to your understanding the point that may be in doubt. I had intended in this communication to give the whys and wherefores of this system, and answer a few of the most prominent objections that are made to it, as well as to point out why the various systems that are intended to approximate to this, and the system which had suggested itself to your mind, and spoken of in your letter, will not do. But I am warned by the number of pages already written, that I shall quite occupy the space that the editors can conveniently spare for one letter. In my next I will take up those subjects, when the beauty of the system will more fully appear.

With high regard,

Your most obedient servant.

R. S. HARDWICK.

Jocassie, Hancock county Ga. }
June 15th, 1847. }

Break your land, or it will break you.

EXTRACTS FROM

MR. CAMERON'S ADDRESS

[CONCLUDED]

CROPS FOR PARTICULAR SOILS.

"I would urge our farmers, especially those on clay soils, to confine their corn crop, as far as it is practicable, to the improved or manured portions of their lands, as it is only from such portions we can reasonably hope for a paying crop. In nothing do we commit a greater error, than in making ourselves so entirely dependent on the corn crop. With us it is meat, malt, meadow, and manure. The clay soils will make the best returns in the small grain crops, pasturage of light animals on clover, and pea crops. Such soils, when nearly destitute of sand, are too slow for either cotton or tobacco, unless, by the application of large quantities of the most stimulating manures, their character and capacity be much changed and quickened. Such lands, every where, constitute the best districts for farming, and maintaining a mixed system of husbandry. On the sandy soils, both cotton and tobacco may be cultivated, on highly improved lots, with a good degree of success; and the establishment of manufactories near us should stimulate us to better efforts in their production, both as regards quantity and quality.

RYE.

"On the sandy soils of Orange, as a general rule, we must not expect the best crops, of wheat and oats; yet from such soils only, can you obtain the best crops of rye. I have never obtained a good crop of rye on a clay soil. No crop yields a larger amount of long food for stock, on poor sandy soils; and when sown early on good soil, it will furnish fine green food for stall feeding of stock, in the months of February, March, and April, and then yield a good crop of grain. By every consideration of self-preservation, we are called to make better efforts to expel the northern grocer from the State, with his butter, and the Ohio and Kentucky horse, mule and hog driver, from our county at least.

REPROACH ON N. C. FARMERS.

"I shall make no suggestions to any one to expend a dollar for the importation of Devons or Durhams, until he has provided food for them.—But it is a reproach on us as farmers, and no little deduction from our wealth, that we suffer the population of our towns and villages to supply themselves with butter from another Orange county in New-York. In all the sea-ports, soon to be opened to us, good butter is seldom less than twenty-five cts., and oftentimes thirty. I know no business that will pay better than a well-kept dairy.—

I know not when I have been more humiliated, as a North-Carolina farmer, than when, a few weeks ago, at a Rail-Road Depot at the very doors of our State Capitol, I saw wagons drawn by Kentucky mules, loading with Northern Hay, for the supply not only of the town, but to be taken to the country! Such a sight at the Capital of a State whose population is almost exclusively devoted to agriculture, is a most humiliating exhibition. Let us cease to use every thing, as far as it is practicable, that is not the product of our own soil and workshops—not an axe, or a broom, or bucket, from Connecticut.

GRASS FOR STOCK.

"Could I be the means of inducing every farmer of Orange to keep ten acres, of his best lands well set in clover and orchard grass, to be fed to stock in stalls, I should, in the production of manures, and in the increased means of living, have accomplished more for the solid wealth of the county, than an entire regiment of second class politicians.—Doubtless we have much land in Orange that it too cold, acid and poor for the production of clover; and it will burn out here as every where else. But, as a general rule, good clover may be obtained on any soil that will yield a luxuriant crop of black-eye peas. Our branch land, of which we have much, will, if properly prepared, yield most abundant crops of red-top; and heavy crops of both Lucerne and Italian rye-grass can be obtained from any of our deep, dry and rich soils."

VARIETY OF CROPS.

"If it is wise in nations to maintain a division of labor, it is certainly not less wise in farmers, especially those far removed from market, to produce a variety of crops. I will simply offer some suggestions, that seem to me to promise good; and I wish to revive no exploded humbug.

THE GROUND-PEA

"Elsewhere the Ground-Pea is attracting notice, is entering largely into commerce, & is being largely distributed in the Northern States and Canada, by means of the multiplied Rail-roads, and is now an object of importance in the markets of our own State. A single planter in one of our Eastern counties has obtained from it an annual income of \$6,000. He obtains from fifty to seventy-five bushels to the acre, cultivates five acres to the hand, which, at \$1 a bushel, yields an income of \$250 to \$375 to the hand."

YEAST HOP.

"In this connection, I would suggest also the Yeast Hop. It is a crop of growing importance, especially for breweries, not to name other uses.—

Its culture in the United States is confined almost entirely to one State, and in that State the production has, in a very short time, increased 200 per cent. A thousand pounds to the acre is not an unusual crop, and finds a ready sale at thirty cents a pound. And this season, two brothers in Watertown, New-York, produced a crop of 30,000 pounds on twenty acres; yielding, as a reward for labor, on twenty acres, the large sum of \$9,000! This is quite equal to hunting gold in California, and is far more certain. That this crop may be produced in Orange, on deep, dry and rich soil, I do not question, from my acquaintance and care of the vine in my garden. The picking of the crop will not be more laborious than the picking of cotton.

SILK.

"It is not to be doubted that the climate of our State is as well suited to the health and constitution of the worm as any part of Europe; this is the testimony of the best informed. In our own manufactories American silk is worth two dollars a pound more than any imported silk. At the late World's Fair in London, the premium for the best sample of silk was awarded to a silk grower of Virginia, demonstrating that we may make ourselves the rivals of Lyons, as we now are of Manchester. A silk periodical states the fact, that three children in Connecticut, attending school daily, produced a crop worth \$175! One hundred pounds can be produced from an acre of mulberry trees, planted as thick as we plant corn, and each pound is worth from eight to ten dollars."

EMPLOYMENT FOR INDIGENT FEMALES.

"This class of our population, now without employment, should be engaged, on a large scale, in the manufacture of willow-ware, corn brooms, and other items suited to female taste and capacity.

IMPROVEMENT OF ANIMALS.

"Domestic animals are essential to efficient tillage, and to proper supplies of food and clothing, and add largely to the wealth of the farmer in the production of manures, and are not to be dispensed with. The value of neat cattle exceeds that of all other stock in the United States. But not until we shall be able to provide full supplies of food, and extend to them a more humane care, should we attempt to improve our stock of cattle, by costly importations, that may perish the first summer by so fatal a disease as the distemper. At present it will be to our interest to make judicious selections from such stock as we have, which embraces a few of the best, and many of the worst, and almost every variety of shape, color and character."

SHEEP RAISING IN NORTH-CAROLINA.

"In modern times, every where with enlightened nations, in the successful cultivation of the arts of peace, the Sheep has been regarded as an animal of the first importance. For a long series of years it made Spain and Portugal the most wealthy and powerful of European nations. And it was not until England became a wool-grower, and by the wisdom of her statesmen and financiers, offering large bounties to the artist of Spain and Flanders, did she set around her "sea-girt Isle" those pedestals on which will rest, for all time to come, the pillars of her national grandeur, civilization and strength; now sustaining on her soil a family of more than fifty millions of sheep, with an average yield of from four to seven pounds of wool."

"In an address like this, I cannot give the names of the varieties, much less the accumulated teachings of centuries for their care and keep. Our countrymen to the north of us, are going forward in this enterprise with the utmost confidence and liberality; and the most experienced and trusted wool-staplers and shepherds of our own country and Europe are retained, without regard to price, to make selections for importations to this country, which is telling with wonderful force on the flocks of the northern States.

"We have every inducement in North-Carolina, especially in this part of it, to go largely into this business as a business. A dry and healthy climate, a rolling surface, sweet and varied herbage, cheap exhausted lands abundantly watered,—all invite to it with assurances of the best success. The field pea, both vine and pod, will furnish abundant supplies of food; and our old fields, enclosed with stone walls and burnt off annually, will in a few years furnish abundant pasturage—doubling the value of the lands at once by the durability of the enclosures, and putting our entire surface to profitable husbandry without any additional laborers. I regard the agricultural capital of the county increased to the amount of ten dollars by the addition of every sheep that yields three pounds of wool. It cannot be many years before the hill-sides and slopes of Orange will be covered with fine flocks, and sheep-husbandry become a leading interest of the county. And if the Legislature will not protect us against the hordes of worthless dogs that annually decimate our flocks, we must protect ourselves. A substantial tax would at once rid us of a race that, like the drones and loafers of our own species, will take a living if it be not given to them. It is to be hoped that the next Legislature will settle, and for ever, in North-Carolina, that wool is of more value than dog's hair and it is not doubted that the good sense

and good taste of the Representative who declares his preference for the royal Merino, or the gentle South Down, will be sustained and confirmed at home."

THE HORSE.

"I should be wanting in gratitude, and false to my admiration of the noblest of all animals, in association with which I have passed a half of my life, in the discharge of out-door duties, in search of health or social intercourse, did I not make an appeal to you in behalf of the Horse. I have only to request that you will visit any large collection of horses at our county town on any public occasion, to obtain from you the candid confession, that our stock of horses is on a level with every thing in our husbandry. With us the race of noble bloods is well nigh extinct. Our horses are all woefully deficient in all the essentials of size, figure, bone, muscle, depth of girth, game and action. I do not wish to be regarded as the advocate of a "mammoth race" in any of our domestic animals, especially the horse. Such a race is not suited to our capacity to keep, our service or climate. We need a horse of all work—a roadster in the farm horse—and if we consult our interest or our pleasure, we will begin anew.

"In the Southern States, all the efforts that have been made to improve the horse, have been directed by a single idea, and controlled by a single object—the attainment of the highest speed. And the achievements of the Southern race-horse on the best contested fields, have placed him at the very head of the racing calendar, both in Europe and America. We need no such horse; nor, as farmers, have we any use for a race known in our county as the "telegraph line," reared to hard times on broom-straw, and doomed to harder service, oftentimes looking as much like an overgrown hound as a horse; and which, under the influence of a spur both in the head and heel of the riders, have performed some most astonishing feats, eclipsing Fremont and Kit Carson, in speed if not in duration. My own observation, sustained by the judgment of the best informed, induces me to suggest that, so soon as any attempt shall be made to improve our stock of horses, we should seek for the well-known crosses of the Vermont Morgan and the Cleveland Bay. It is to be hoped that our intelligent farmers will look closely into this interest, and when a beginning is made, it shall be directed by the best liberality and judgment. And in this, associated means might accomplish much good, not only for the adventurers, but for the entire community.

THE MULE.

"It is but naked justice for me to declare, that for all the drudgery of the farm, the Mule is without an equal. It is known that he is almost exempt from disease. subsists on short and coarse food, attains great age, and meets all the demands on him in the heats of summer and the storms of winter with almost unflinching firmness and fidelity. No animal is more worthy of our care, considered with reference to his capacity for intense labor, or the facility with which he may be disposed of in the market. The rearing of mules in the Western States was never prosecuted on so large a scale or with so much profit. It is a certain source of great individual profit, and is now, in association with the culture of cotton and the transportation of trains to the Pacific shores, an item of much national importance. Those reared on our own soil suit us best, and we should at least supply our own wants.

DETERMINE TO EXCEL.

"It will be in vain that we shall establish State and County Agricultural Societies, possess ourselves of the best agricultural Journals, introduce new crops, clover and the grasses, improved stocks of domestic animals, build Railroads and improve County roads, if as farmers we go not to work with a stronger will, and a fixed determination to excel. Let us tolerate no loafer or idler.

"The idler is a watch that needs both hands,
As useless when it goes as when it stands."

MANURES.

"Unless we intend to yield our homes to the fox and the owl, and abandon the graves of loved ones, the axe must be laid aside, and more time, more labor, and more capital devoted to the accumulation of manures. This is the crop of all others that we most need. This is the wand of Midas that turns all into gold. This is the key to the farmer's treasury. Farmers should regard manure as a part of their capital, not to be secured by paper and parchment, but by substantial roofs and sheds; as money, which requires but to be properly employed to return him usurious interest.—They should husband it as their cents and shillings, which they intend to increase to dollars. And he that will not feed his crops with manures, should not complain if his crops fail to feed him with bread. We must, with a liberal hand, spread fatness and fertility over our wasted homesteads, in the form of barn yard manures, and, so soon as it can be accomplished, cover every acre of our open lands with marine and mineral manures to the full ex-

tent of our capacity to use such fertilizers; and then, and not till then, will the ox and the ass know their master's fields and cribs.

"Wasted fields and naked sterility every where surround us. Reduce your surface; cease to cultivate lands that do not pay for tillage; concentrate your labors and manures; strive in every way to furnish larger and better supplies of domestic manures. Let every thing that is capable of decomposition be gathered up; permit no waste; confine your stock to your own fields or sheds; do not suffer them to live in lanes, or your neighbor's old fields. In Orange county, for all time to come, every man's crop may be measured with perfect certainty by the quantity and quality of his manures. The books are full of the most minute details as to the comparative value, the accumulation, preservation and application of manures. To no worldly matter can you better devote your care and attention.

MAKE HOME LOVELY.

"Seek to make your homes lovely, especially in the eyes of your children; induce them to aid you in ornamenting it. Children employed and happy at home, are the best guarantee for virtue and devotion to parents. No cottage so humble that it may not be made sweet by neatness; none so lowly that it may not be embellished by the hand of industry."

GARDENS.

"Surround your dwellings by fruitful and well kept gardens. A patch of cabbage, six rows of Irish potatoes, and three rows of onions, do not constitute a farmer's garden. Use only the best seed, and plant only the best fruit. It is as easy to cultivate the Vergalue and the Bartlett, as the Choke Pear; the Green Gage, as the Horse Plum. No man is better entitled to all the good fruits of the earth, than he who tills it. And Lord Bacon declares, of the garden, "that it affords the purest of human pleasures, the greatest refreshment to the spirit of man, without which, buildings and palaces are but gross handiworks."

BEST TOOLS AND SEEDS.

"Make yourselves the owners of the best tools, especially of the best ploughs, teams, and carts, and, at any cost, of the best seed."

MONEY AND LABOR.

"By a judicious use of money, and by wiser and better applications of labor, it is not unreasonable to predict, that, stimulated, as it is hoped the agricultural heart and mind of the county will be, by the passage of the Locomotive across our plains and valleys, in the next ten years, the pro-

ducts and values of the County, agricultural and mechanical, may be nearly doubled. This may seem extravagant; but what has been accomplished elsewhere, by manuring, draining, good tillage, alternating crops, clover and grass culture, substituting fallow crops for naked fallows, I undertake to say for the farmers of Orange, can, will, and shall be accomplished here."

"These are the means by which Great Britain, this season, obtains her largest yield of wheat from her old and deep-tilled soils. These are the means by which the valley of the Po, Flanders, and many of the older portions of the world, have been made to surpass in production our young and fruitful America. These are the means which are being used in portions of our own State with most satisfactory results, quadrupling the value of the land and the income of the planter. And the same industry and intelligence, applied on the soil of Orange, will accomplish the same results here."

CLIPPINGS OF A PRACTICAL FARMER.

SELECTED FOR THE ARATOR.

LIME AND ITS USES IN AGRICULTURE.

Lime is one of most abundant substances in nature—usually as a carbonate, consisting of 56½ parts of carbonate, and 43½ of carbonic acid, in 100 of mineral. In burning, the acid escapes in the form of steam. It is then quicklime. After exposure to the atmosphere, it absorbs water, slacks, and falls into an apparent dry powder; it is then hydrate of lime, and is in the form in which it is generally used for agricultural purposes. It is the most valuable, when used directly after it has fallen into powder. If long exposed to rains and dews before being spread upon the land, it loses a great portion of its fertilizing powers, which principally consist in its action upon vegetable matters, causing them to decompose, and in its neutralizing power upon acids, which abound in some soils.

The Quantity of Lime to the Acre.—In Great Britain from 100 to 400 bushels are applied at once, at intervals of ten, fifteen or nineteen years—the term which leases run. In this country, the most common practice is to apply 30 or 40 bushels once in three years, which is the preferable mode. We have seen it applied with good effect, however, at the rate of 800 bushels to the acre. This was upon a very still, cold clay. Three hundred bushels would be about ten tons to the acre. Ten inches depth of soil, would weigh about one thousand tons. That would give one per cent. of lime. A case is reported in England, of soil upon which 120 bushels of lime had been used, being analyzed, which apparently contained the same component parts as that along side, which had not been limed for a great number of years. Yet the limed land produced twenty tons of turnips to the acre, while the unlimed only produced two tons, tops and all. This was upon red sandstone land. One of the effects of lime is, it gives the soil power to absorb ammonia from

the atmosphere, and retain that which is disengaged by the decomposition of vegetable matter and manure in the soil. Hence the importance of applying lime with green crops, or using coarse manure with the lime.

Indications of the Want of Lime in the Soil may be seen in heavy crops of straw, and light crops of grain; and in root crops where they seem to run to fingers and seed. Experiments should be made by every farmer with lime, upon various crops in all his fields, to ascertain whether lime would be beneficial to him. Very few places will be found where it will not be so.

To apply lime to the Soil, spread it evenly upon a crop of clover about to be ploughed under, or sow it upon the surface with the wheat, and harrow thoroughly. It should never be combined with manure, unless the whole is immediately to be ploughed in.

To what Soils is Lime Applicable?—Every clay soil, every peaty soil, and every soil, in which vegetable fibre does not readily decay, because that is a sign it contains some antiseptic acid, which prevents decay. This is the case in peat beds and swamp. Sandy, or thin soils, may be overlimed and injured; because in causing the decay of vegetables, it sets free the ammonia, the very substance of fertility required. To prevent this, more food must be given for the lime to act upon. No farmer, who knows what the action of lime is, upon all soils, will ever do without it, as an accessory to his manure. It is a component part of all crops grown by the farmer. When applied to land which has not borne wheat for many years, it has at once restored it to fertility for that crop.—Where it has failed once to remunerate the farmer using it, it has proved of the greatest benefit a hundred times.

Use of Lime with Peat.—The slow decomposition of peat is an objection to its use. By the term, we mean all swamp muck, partaking more or less of that character. All peat contains resinous matter, which prevents decomposition. By adding lime, the resin is combined, and forms soap, and the fibre then decays as rapidly as any other vegetable substance.

Lime in the Soil.—Many farms which once produced good crops of wheat, because there was lime enough in the soil to supply the requisite quantity to the grain, have ceased to be productive. They still produce a large growth of straw, but not a remunerating crop of grain. In some instances, such lands have been restored to their former fertility without applying a bushel of lime. Do you ask how? Simply by ploughing deeper. In the hard, untouched and unexhausted subsoil, there was plenty of lime lying hid, which only wanted stirring up and exposing to the action of the atmosphere, and bringing within reach of the roots of the plants, to produce the same effect originally derived from the top soil before it was exhausted. Our constant advice will be to use lime, plough deep, subsoil and drain stiff lands, increase your crops, and grow rich, which you will do if you read and heed.—*The Plough.*

GUANO.

Many farmers, not accustomed to the use of guano, rely on the statements of the vender, or a neighbor, or any other, person who will give advice as to the best method of using it, the best articles to mix with it, &c., and not unfrequently are led into very grave

errors, which a little reflection would have caused them to avoid. The advice of no man should be followed when it is contrary to the uniform result of scientific experiments, or to common sense. No constant reader of the Farm Journal would ever be guilty of mixing guano with a class of materials only calculated to set free its ammonia. But as some of our new subscribers may not be posted on this subject, we append an extract from a communication by Prof. Benjamin Hallowell to the Virginia Sentinel. He says:

"I may state that it is entirely opposed to chemical principles to mix live ashes or quick-lime with any animal manure. Ammonia, the chief valuable characteristic ingredient of animal manures, is usually found in these manures in combination with some organic acids, owing to the generally stronger affinity, unite with potash and lime when they are present, and liberate the ammonia, thus rendering the manure of much less value.

"But this is not the only injury. The liberated ammonia unites with the acids in the soil, as the humic, cerenic and apocrenic acids which are almost insoluble, and forms compounds readily dissolved and washed from the soil by the rains, greatly depriving it of those constituents upon which its fertility chiefly depends.

"It is the deteriorating effect arising from the escape of the ammonia, and the soluble compounds it forms with the organic acids in the soils, that indicate the propriety of mixing plaster with guano to fix the ammonia, previous to sowing it on the land. The first crop may be none the better thereby, and, in some rare instances, possibly not quite so good; but the land will always be in a state more favorable to the growth of subsequent crops.

"I will take this occasion to repeat, that I regard the discovery of guano, and its introduction into our country, as a great blessing, by increasing the fertility of our soils, and affording the means of improving many lands, otherwise in a state of hopeless sterility. But we must not depend upon the use of this, as the settled policy of farming, to the neglect of our home manure. It is opposed to every principle of political economy, to send as far as half the circuit of the globe for guano, and neglect equally, or even more valuable manures, on our very premises, and in our neighboring cities."

NUMBER OF PLANTS TO AN ACRE.

We are unable to say where the following article originated, but are inclined to think its author is Dr. G. B. Smith, of Baltimore. If we are right as to this, the calculations may be taken as correct, without examination. The table may be useful to many at this season of the year.

The following table shows the number of plants contained in an acre, planted at the several distances in the columns marked "feet apart." For example, an acre will contain 10,890 corn-hills two feet apart; 2,151 four and a half apart. These numbers are obtained by dividing 43,560, the number of square feet in an acre, by the square of the number of feet the plants are placed distant from each other; thus—the square of 2 is 4, and 43,560 divided by 4 gives 10,890 as above. If the plants be set in an oblong form, as five feet by six apart, multiply the two

distances together, and divide 43,560 by their product for the answer. When setting out trees, farmers generally name the distance in yards. In this case, divide 4,840, the square yards in an acre, by the square of distances apart, if they be equal, or by their product if they be unequal, and the quotient will be the number of trees in an acre. For example: at 7 yards apart, an acre contains 98 trees; for the square of 7 is 49, and 4,840 divided by 49 gives 98, the nearest whole number. If the distances be 7 and 10, their product is 70, and 4,840 divided by 70 gives 69 trees.

Feet apart.	No. plants.	Feet apart.	No. plants.
1	43,560	9½	482
1½	19,360	10	435
2	10,890	10½	395
2½	6,959	11	360
3	4,840	12	302
3½	3,556	13	257
4	2,722	14	222
4½	2,151	15	193
5	1,742	16	170
5½	1,417	17	150
6	1,210	18	134
6½	1,031	19	120
7	889	20	108
7½	774	25	69
8	680	30	48
8½	602	35	35
9	527	40	27

A THING WHICH EVERY FARMER SHOULD KNOW.

If you wish to drive a cut nail into seasoned oak timber, and not to have it break or bend, just have a small quantity of oil near by, and dip the nail before driving, and it will never fail to go. In mending carts and ploughs, this is of great advantage, for they are generally made mostly of oak wood.

In straightening old nails before using, let it be done on wood, and with easy blows; if done on iron, they will be sure to break.

SORE TEATS IN COWS.

P. Hallock gives the following directions for the management of cows that have sore teats:—

"Take a full pail of cold water, and wash and rub the sores well. Use the whole pailful of water before milking, which cools the teats, or reduces the fever, and the cow will stand perfectly still.—After milking, use half as much more cold water, cleansing the bag and teats well, and in a few days the sores will be healed. That is not all the good you will receive. You will have clean milk and that is the way to have clean butter."

CRANBERRY PIE.—*Wash and pick one pound of ripe cranberries, add to them one pound of loaf sugar, and beat them five in a mortar. Have ready a puff paste, with which line your dish or soup plate; pour in the mixture, cover it with paste, ornament it with icing, and bake in rather a quick oven.*

We are indebted to American Farmer for the following interesting article:
THE CHINESE POTATO.—(*Dioscorea Batatas*.)



MR. JOHN HENDERSON, of Kingskerwell, South Devon (late of Pineapple-place, London,) has published a pamphlet of very great, and indeed of universal, interest, describing the new and valuable Chinese esculent, and explaining the best mode of culture in this country. When the potato-disease excited so much fearful anxiety, a discovery (remarks Mr. Henderson) scarcely less than Providential was made.—This was the introduction into France by M. de Montigny, the French Consul at Shanghai, in China, of a particular kind of Yam—now known as the *Dioscorea Batatas*, or Chinese Potato—which appeared to him to be admirably calculated to meet the exigency of the crisis. The French did not arrive at foregone conclusions, but with that love for scientific investigation which so preeminently distinguishes them, determined to base their opinion of the plant upon the results of a series of experiments of every character. The several points to be determined were definitively settled, and the experiments carefully watched with reference to each particular. These naturally comprehend the quality of the plant in point of flavour and nutritive properties, its productiveness, and the character of the soil upon which it might be grown with the greatest success. These experiments were made by the most skilful horticulturists, and the results are—

I. That in point of flavour and nutritive properties, it is equal to the potato, and in the opinion of Professor Decaisne, superior.

II. That the quantity yielded is greater than that of the potato, whilst its freedom from disease renders the crop more certain.

III. That it will grow upon sandy, and generally considered barren soils, and thus affords an excellent means of turning waste land to a useful purpose, as well as to profit.

IV. That it can be propagated with the greatest facility (as will be seen by the remarks on cultivation.)

V. That it may remain in the ground several years without degenerating, but on the contrary, each year it increases in size, weight, and nutriment.

VI. That when harvested it may be preserved in cellars or sheds, without vegetating, for many months after the potato has become useless for food

When these things are considered, it cannot be doubted but that this esculent must ere long come into general use, and obtain that consideration at the hands of all which its intrinsic merits so imperatively demand. Amongst those who are pre-eminent in the attention paid to this plant is the learned Professor Decaisne, whose report is full in itself, and conclusively important in its results.

CULTIVATION.—M. de Montigny informs us that “the Chinese put aside all the smallest roots at the taking up, and place them in pits or trenches, covering them well with straw, over which they afterwards spread a coating of earth. In the spring they are taken out and laid horizontally in beds of prepared mould, where they soon germinate and produce long trailing stems. As soon as they have attained about six feet in length (which is generally in a month or six weeks’ time) they are taken

up to be replanted and layered. The manner in which this part of the operation is performed is as follows. The ground having been prepared and thrown into ridges, either by means of the plough or spade, a slight furrow is made on the top of each ridge with a rake or hoe, and the plant laid in it lengthways, and the whole of it, except the leaves, is covered lightly with earth, care being taken that they (the leaves) are left exposed: if it rains the same day they take immediately; but should it be dry weather, it is necessary to water them till they begin to grow. At the end of fifteen or twenty days they will produce tubers, and at the same time will throw out long trailing stems, which ought to be examined from time to time, to prevent their taking root, and so producing another set of tubers, which latter would injure the full growth of the first or main crop."

But I find, says Mr. Henderson, that the ordinary manner in which the Chinese cultivate it is still more simple than the above.

The earth is formed into ridges, when small tubers, or portions of large ones, are planted on the top, at about three feet apart; after the plants have attained a little strength, the shoots are spread over the sides and pegged down at the leaf end, six or eight inches from each other (care being taken to cover the joints or parts pegged down with a portion of earth,) when they soon strike root and throw out tubers; by this means, immense quantities of roots, of the size of early-framed kidney potato, are raised on a comparatively small piece of ground.

But, to obtain them of a large size, small tubers, or portions, are planted on ridges, at ten inches to one foot apart, and the plants are allowed to grow freely till late in the autumn; the tubers by this means attain on an average one pound and upwards in weight. The produce, when the ground is required for other purposes, is taken up and stored away for the winter and spring; and it seems a peculiarity in this root, that if exposed to the frost, it is not injured by it.

We append an illustration of this truly interesting vegetable, which bids fair to earn for itself a high reputation, and as a necessary consequence its general employment as an article of food.

POSTS AND STAKES.

MR. EDITOR:—I have been a constant reader of the *New England Farmer* over one year, and do not recollect of seeing anything in it about setting posts and stakes in fences. I had heard it stated that the top end of the stick should be stuck in the ground. In 1838, I took a stick 14 feet long and cut it in the middle, setting the butt of one up, and the other down, 12 feet apart. In five years the one with the butt down rotted off, and the other stands sound yet.

East Barnard, Vt.

J. DAVIS.

REMARKS.—The above is a model communication, Mr. Davis utters his facts without preface or circumlocution. They are read in a moment, understood as quickly, and are worth a "mint of money." The evidence is strong enough to induce any man, if he will but look at it, to set his posts and stakes butt-end up.

A person writing in the *Hartford Times* several

years since, said that in taking up a fence that had been set fourteen years, he noticed that some of the posts remained nearly sound, while others were rotted off at the bottom. On looking for the cause, he found that those posts that were set *limb part down*, or inverted from the way they grew, were sound. Those that were set as they grew, rotted off.

"A Farmer" writing in the *Germantown Telegraph* in 1849, says a gentleman in one of the New England States set a series of white ash posts, and for the purpose of testing the theory, set every other one top part down. After eight years the inverted posts were sound and good, while those that had been set with the butts down were, in almost every instance, decayed.

Another person in the same State set two chestnut posts for the purpose of hanging a gate. After a lapse of eighteen years he found the one butt end down very rotten, while the other, set with the top end in the soil, scarcely exhibited any appearance of rot.

The reason probably is, that the sap vessels are filled with sap, undergo a chemical change, and induce internal decay, while the moisture from the earth carries on the same operation on the external parts of the wood. Or, it may be, that the tubes through which the sap ascends have valves or separations, to prevent the weight of the sap from falling back, and that if the posts are set as they grew the moisture would rise as did the sap. While if inverted, not only would the sap flow down, leaving the post dry, but no moisture would rise.

But we are not certain about this. The subject is important, and worthy the attention of some of our scientific correspondents.

All persons making fence will do well to remember these facts.—*N. E. Farmer.*

MINUTE PUDDING.—Put a pint and a half of milk on the fire; mix five large spoonfuls of flour with half a pint of milk, a little salt and nutmeg. When the milk boils, stir in the mixed flour and milk. Let the whole boil for one minute, stirring it constantly. Take it from the fire; let it set till lukewarm, then add three beaten eggs. Let it bake on the fire, and stir it constantly until it thickens. Take it from the fire as soon as it boils. To be eaten with nice sauce.

INDIAN BREAD.—Beat two eggs very light, mix alternately with them one pint of sour milk, or buttermilk, and one pint of Indian meal; melt one tablespoonful of butter and add to the mixture; dissolve one tablespoonful of soda and saleratus, &c., in a small portion of the milk, and add it to the mixture the last thing; beat very hard and bake it in a pan or in a quick oven.

Be sure to save manure.

IMPORTING FOOD.—It has for several years been a crying shame that North Carolina, which is emphatically an agricultural State, has been annually indebted to other States for food for her people and her cattle. It was bad enough that she had to get from the North every farming or household implement, from the plough down to the broom; that with boundless forests of her own, she imported even the simplest wooden implements, made at the North where wood is scarce and dear. But when she took to importing bread and meat, and hay to feed her famishing cattle and horses, her people ought to have seen that such a course would necessarily lead to trouble—that it must result in pecuniary embarrassment. And so it has. Nearly every part of the State, and every interest in the State, is now bitterly realizing the pressure, resulting manifestly from the excess of importations of foreign and northern goods and produce.

But at present North Carolina is not singular in its deficiency of food. And the sources from which our wants have heretofore been supplied, are themselves exhausted, or so nearly so that they cannot sell to us except at ruinous prices. Baltimore, by means of its rail road connection with the West, has sometimes supplied us with corn. But now the article is worth there \$1 08 by wholesale, and could not be delivered here at less than \$1 30 at the least. New Orleans, too, the great depot for the supposed boundless supplies of Western grain, has occasionally supplied North Carolina. But in New Orleans corn is worth \$1 23. Of course nothing but starvation can justify an attempt to bring it thence at that price.

To all appearance we shall have to get corn, in this part of the State, from some foreign quarter. But what quarter? is the question. It is worth from wagons \$1 30 a bushel, and retails at \$1 50. There are yet four months to come before any of the new crop can be fit for use. The supply from the country cannot be adequate, unless we are greatly deceived, not only by statements from thence but by the small quantity which such high prices tempt to come in. Where is it to come from? And what price will it reach? These are serious questions, at a time like this, when money is as scarce as corn. There is and must be great suffering among the poor.

We are not disposed to produce any unnecessary alarm. In any evil effects of such alarm we must suffer along with others. But we desire to direct attention especially to the subject, in the hope that it will be the means of drawing this way any surplus grain that may be in the upper

part of the State. If there be such a surplus within 150 or 200 miles, surely the present price is high enough to tempt its owners to send it forward.

One purpose we have in view, is again to urge upon our readers the necessity of giving more attention than of late years, to agriculture. Let those who have land, cultivate it at least to the extent of their own wants. The present deficiency is the result of a diversion of agricultural labor to merchandize, to naval stores, and to other consuming, instead of producing occupations.

Another idea may do some good. We heard incidentally from a merchant of this town a few days ago, that one of his customers in an adjoining county has a crib of several hundred bushels of corn, more than he wants for his own use, which he will not send to market because he knows it will be needed by his neighbors. He thinks it probable that he will never realize fifty dollars for the whole of it. In other words, he means to let his neighbors have it, on credit or gratuitously, rather than sell it at the present enormous price, and then see them suffering for the want of it. We occasionally hear of such acts of benevolence; and they show that the world is not all given over to selfishness and avarice.—*Fay. Obs.*

KITCHEN GARDENS.

A garden should never be plowed. The plow will not always run deep or regular enough; it will not turn all the soil; the earth will not all be pulverized as it falls, and the tread of the horse or oxen will make much of it hard and unproductive.—The best operation for a garden is a spade or good manure fork. This should be thrust down its entire length, the earth lifted above the ground and turned exactly over as it falls; and if any of the lumps do not crumble, these should be struck effectually by the back of the spade or fork till they are thoroughly pulverized. Care should be taken at the same time to pick out every stick, stone or other foul stuff, and to mix and incorporate the manure with the soil. This can be done by hand work with the spade, when it cannot be done by the passage of a plow. In spading, every root of grass or weeds should be extracted, thrown into a basket and deposited in the hog yard. By such pains, great labor in subsequent weeding will be saved.

The soil of a garden should not be ploughed or spaded when it is at all wet or clammy. If it falls like putty, it will dry at that and remain like brick all summer. Do not move it till it will crumble finely by its own weight in falling. This lets

the air in between all the particles; the air vitalizes it as it does our own lungs, and through the season the ground will be lively and fertile. You cannot stir the earth too much or pulverize it too finely. It is worth more than manure to the soil.

Never apply your manure—especially from the stable to the kitchen garden. You are sure thus to save millions of weed seeds that will spring up and clothe your cultivated plants, and give you great trouble.

In setting out bushes, herbs, plants, &c., of all sorts, we prefer never to water them artificially; but to transplant when the earth is moist as it always is in spring, and leave the rest to nature.—By pouring a stream of water from a pot or bucket on to a transplant, the earth is beat down hard, in which shape it dries, and the new rootlets find it difficult to penetrate the soil about them and thus derive the necessary nourishment.—*Goward's Real Estate Register.*

BUTTER MAKING.

Not one pound in five of the butter sold in our cities under the name of "Goshen," &c., and very little "Country butter" is fit for human food. Butter makers should remember these few short rules: The newer and sweeter the cream, the sweeter and higher flavored will be the butter. The air must be fresh and pure in the room or cellar where the milk is set. The cream should not remain on the milk over thirty-six hours. Keep the cream in tin pails, or stone pots, into which put a spoonful of salt at the beginning, then stir the cream lightly each morning and evening: this will prevent the cream from mouldering or souring. Churn as often as once a week, and as much oftener as circumstances will permit. Upon churning, add the cream upon all the milk in the dairy. Use nearly an ounce of salt to a pound of butter. Work the butter over twice, to free it from the buttermilk and brine, before lumping and packing. Be certain that it is entirely free from every particle of buttermilk and coagulated milk, and it will keep sweet forever. In Scotland, a syphon is sometimes used to separate the milk from the cream, instead of skimming the pans.—*Real Estate Register.*

DEARBORN'S SELF SUPPORTING SCAFFOLD.—The inventor of this really valuable scaffold is an elderly man and is induced to offer his invention to the public not so much as a matter of immediate pecuniary profit, as a desire to prevent accidents. We think the patent scaffold is an excellent structure for the purposes for which it is intended. Staging

of ordinary size costs from \$150 to \$200; his scaffold may be of any dimensions, even one foot in breadth by the side of a building, and may be raised to any height. The erection, merely, of a staging in a large church costs about \$200, but this scaffold costs only a small sum, and may be erected or taken down with facility and at pleasure.—*Real Estate Register.*

HOW TO IMPROVE WORN-OUT LAND.

For the Arator.

Tarboro', 30th April, 1855.

Some years ago, as I have been informed by old farmers, the busiest time of the year commenced about this season, and continued until the first of August, when the cultivation of the crops was finished, and but little remained to be done the balance of the year, more than to gather the crop, which was generally short—but little more than a support. Now, Mr. Editor, see how things have changed. The quantity of work done the first four months of the year, decidedly the busiest portion, is now nearly equal to what was formerly done in the whole year, and the crops of corn and cotton doubled, if not trebled, under the present system of manuring, ditching, &c. I do not believe there is any part of the world where the same amount of labor (don't mean money) is employed in improving the soil, as is now going on in the county of Edgecomb. Most of our improving farmers are raising from eight hundred to one thousand loads manure to the hand, and putting from one hundred to one hundred and twenty-five loads to every acre cultivated in cotton. This amount of labor tells heavily on our teams, and many of us think we are doing too much in this one branch of business, causing many other things equally necessary to be but imperfectly done; yet we still persist in this course, like thousands who have preceded and millions that will follow us:

"We know the right and approve it too,

"Condemn the wrong, and yet the wrong pursue."

But time will doubtless correct this and many other errors we are committing. The permanent improvement of the land, under this system, is great. I think the increased value of land, at the expiration of each year, treated in this way, is more than equal (saying nothing of the greatly increased crop, which is ample remuneration for expense, trouble, &c.) to the simple interest on monied capital invested in the land.

Allow me to give you the result of my limited experience as a farmer. I do so from no egotistic views, or desire of puffing myself, but from a sincere wish of benefitting others. I began to farm in 1848 upon an old, worn down plantation—soil originally good; but owing to the skinning system in plowing and imperfect draining, or, rather, no draining at all,

pursued by my predecessors, the land was reduced to the lowest degree of sterility. I thought then, and every year's experience since has strengthened me in that opinion, that *draining, deep and thorough draining*, was the first step to improvement. My ditches were cut from three to five feet (still deeper wout do any injury) deep, which laid my land sufficiently dry—(the quantity of land in North Carolina sobbed and injured by water, if cleared and well drained and put in cultivation, would feed the armies of Europe)—to receive other improvements in the way of manure, deep plowing, &c. But here let me caution my young brother farmers of an error I committed in plowing. I thought, if deep plowing was necessary to improve the soil, the sooner I did it the better. I turned up about three inches of the original sub-soil, which had never been disturbed before, and the consequence was, a complete failure in that year's crop on the small portion of land so treated. I am inclined to think the deepening of the soil should be done gradually, not exceeding an inch of a year. The same object will be accomplished in a few years, without sustaining the loss I did.

I continued to improve in every way I could, by removing ditch banks; composting stable manure, cotton seed; keeping my fattening hogs' pens and cow pens well supplied with either litter or swamp mud. The result of this course I here submit. My crop of 1848—6 hands constituted my whole force—was, 5 bags, 400 lbs each, cotton; quantity of corn not remembered, but sufficient for support of my family. My crop every year since, has been regularly increasing, but I will only give you a statement of last year's (1854) crop. My force was seven hands, together with a young man who acted as overseer, and worked what time he could: 200 barrels corn and 55 (400 lbs.) bags cotton. In all my farming operations, I have never used any bought manures, Gypsum excepted, which I found to act well on cotton. It pays well to buy simply to rub the seed in. But I relied on such means of improving as nature had put in my reach, and from my limited knowledge I believe the means are amply supplied upon almost every farm to improve it.

If the plan of improvement now going on in this county, and so rapidly spreading in the adjoining counties, can be made general throughout the State, and it is through the influence of your valuable paper this may be effected—for I suppose nearly every farmer in the State will take the "Arator,"—either of the two numbers issued is well worth the price of one year's subscription—then we may expect to see the Old North State, no longer the by-word, the "Rip-Van-Winkle of the South," shake off her lethargy, and be, as she is well able to be, the best farming State in the Union.

VITO.

INTERESTING TO ALL CLASSES.

For the Arator.

Greensboro', N. C., May 4, 1855.

THOS. J. LEMAY, Esq.

Dear Sir: This being a rainy day, I have a leisure moment, from my active occupations on the farm, to write you a line, enclosing you a \$1 note for the Arator for the ensuing year. I am thus far delighted with it, and my farming career commenced with its appearance. I hope I may find it instructive and entertaining enough to induce me to retain it as an instructor and helpmeet—a kind of *vade mecum*—through many years to come. And as I take great pleasure in seeing all men and measures, calculated to enlighten and improve our beloved old State, thrive and prosper, of course my best wishes are with you and the "Arator." Time and circumstances favoring, I may hereafter furnish you with an article or two on one or more subjects which I deem of great importance to our people. At the present time, however, I have not the leisure to say much more than what I have written. I will venture to add, nevertheless, that as the North-Carolina Railroad approaches completion, the Aurora of hope and prosperity seems to be rising upon the prospects and cheering the hearts of many of our hard-fisted yeomanry of the interior. May this vivifying light grow and increase until the noontide brightness of a perfect day of thrift and prosperity shall flood the entire suriace of the Old North State!

How shall this long looked for time—this happy period—be expedited? I answer, by union, harmony and concert of action on the part of the people—by disseminating information on all subjects, especially *agriculture*—constructing works of internal improvement in every direction, so far as this can be done without embarrassing the people or putting the credit of the State in jeopardy. This can be effected but in one way, and that is by exercising prudence and economy, and constructing such works as will not come in direct conflict with those already completed or in progress. To undertake too much at once, as Judge Murphy did, is to destroy at once all confidence in this only sure measure of relief and redemption left to our people. Prudence and caution must henceforth stand as sentinels in our legislative halls. No matter how much they may be vilified, they, I repeat, must maintain their part, or our fate as a State and free people is sealed for years to come. In fact this is the only way it is possible for us to make steady and sure progress—to keep moving. If Napoleon Bonaparte was of the opinion that there was no other means of speedily and permanently developing all the great resources of France to perfection, but by internal improvements, and that he could thoroughly improve France by creating a debt of some eight or ten millions of francs—by carefully attending to the interests of those who came up to the aid of the government in the construction of the system of canals he proposed—why cannot the people of North Carolina, if they are capable of self-government, do the same thing?

This, sir, in my humble judgment, is the great desideratum now to be accomplished. The proposition that should, above all others, be kept constantly before our people, if we wish to see the State redeemed and our farmers rejoice, by beholding their plantations groan, as it were, beneath the weight of their many crops of golden grain, and flourish in all parts as a garden well watered on every side. Let

our Legislatures, In future, set their faces as *flints* against all old fogies, drones, and sap-suckers, and give countenance, support and their fostering care to the *industry, energy and self-sacrificing patriots of the State*, and my word for it, with the help, the hearty and zealous support and co-operation of a free and independent press, North-Carolina will arise as a phoenix from her ashes. The deeds of our fathers, the memory of the past, the hopes of the future, this glorious land of ours, our birth-right, our sweet homes in the South, all conspire to cause us to unite and labor until these things shall be accomplished. It is a great shame that of all the rich beds of excellent iron ore we have in this State, not one of them is worked to profit, or so as to furnish us with the pig milled for our founderies, or bars for our rail-roads. Cannot a half a million or so be raised and a company of energetic men be formed in the State, to embark as pioneers in this branch of business, on Deep River, or at some other eligible point? This matter, if ever the temple of industry is raised in our borders on a scale commensurate with our resources and interests, as one of the sovereign States of this Union, will be found to be one of the *chief corner-stones* of that useful and magnificent temple. But I have said four times as much as I designed when I took my pen in hand; but after getting under way, and the steam up a little, I could not say less. Pardon my verbosity, and believe me to be, sincerely, your friend and well-wisher in all things commendable, as I assure you I am.

D. F. CALDWELL.

ADVANTAGES OF UNDERDRAINING.

Waring, (says the Farmer and Mechanic) in his "Elements of Agriculture," states that the advantages of underdraining are many and important, and enumerates the following:

1. It entirely prevents drought.
2. It furnishes an increased supply of atmospheric fertilizers.
3. It warms the lower portions of the soil.
4. It hastens the decomposition of roots and other organic matter.
5. It accelerates the disintegration of the mineral matters in the soil.
6. It causes a more even distribution of nutritious matters among those parts of soil traversed by roots.
7. It improves the mechanical texture of the soil.
8. It causes the poisonous excrementitious matter plants to be carried out of the reach of their roots.
9. It prevents gasses from running out.
10. It enables us to deepen the surface soil, by removing excess of water.
11. It renders soil earlier in the spring.
12. It prevents the throwing out of grain in winter.
13. It allows us to work sooner after rains.
14. It keeps off the effects of cold weather longer in the fall.

15. It prevents the formation of *acetic* and other organic acids, which induce the growth of sorrel and similar weeds.

16. It hastens the decay of vegetable matter, and the finer comminution of the earthly parts of the soil.

17. It prevents, in great measure, the evaporation of water, and the consequent abstraction of heat from the soil.

18. It admits fresh quantities of water from rains, etc., which are always more or less imbued with the fertilizing gasses of the atmosphere, to be deposited among the absorbent parts of soil, and given up to the necessities of plants.

10. It prevents the formation of so hard a crust on the surface of the soil as is customary on heavy lands.

HOW MUCH SEED TO THE ACRE?

This question (says the Farmer and Mechanic) cannot be answered definitely, as the opinions of farmers differ materially; and then the climate and soil have much to do with the quantity. The quantity of seeds sown broad cast to the acre is about as follow:

Wheat,	-	-	1 to 2 bushels.
Barley,	-	-	1½ to 2½ "
Oats,	-	-	1 to 2 "
Rye,	-	-	¾ to 1 "
Buck-wheat,	-	-	¾ to 1½ "
Millet,	-	-	1 to 1½ "
Indian Corn,	-	-	1 to 2 "
Beans,	-	-	2 to 3 "
Peas,	-	-	1 to 2 "
Hemp,	-	-	1 to 1½ "
Flax,	-	-	½ to 2 "
Timothy,	-	-	12 to 24 quarts.
Mustard,	-	-	15 to 20 "
Herd' grass (red top)	-	-	12 to 12 "
Flat Turnip,	-	-	2 to 3 lbs.
Red Clover,	-	-	10 to 16 "
White Clover,	-	-	3 to 4 "
Kent'y Blue grass,	-	-	10 to 15 "
Orchard Grass,	-	-	20 to 30 "

The quantity per acre, when planted in rows or drills, is about thus:

Broom Corn,	-	1 to 1½ bushels.
Beans,	-	1½ to 2 "
Peas,	-	1 to 1½ "
Pea Nuts,	-	1 to 2 "
Onions,	-	4 to 5 lbs.
Carrots,	-	2 to 2½ "
Parsnips,	-	4 to 5 "
Beets,	-	4 to 6 "

Our readers would do well to keep this table for reference.

CULTURE OF THE SWEET POTATOE.

The following method of raising sweet potatoes, was furnished to the *Soil of the South* by one of its contributors, who says it was highly successful last year, notwithstanding the long drouth and great heat, his crop measuring three hundred and seventy-two bushels heaping measure to the acre, and much larger than any raised in his section of the country. What section this is we have not been able to learn, but we suppose it is Georgia or Alabama. Of course, it would have to be modified in some respects to suit the climate.

About the middle of February, I open a bed four feet wide, six inches deep, and of sufficient length, and fill with fresh stable manure, (to generate heat;) cover with one inch soil; take the seed from the bank, break them into pieces, of suitable size for planting; then spread them evenly and close over the bed, and cover with four inches of earth, and leave them to sprout; when you find they have all sprouted, (say middle of March,) spread over your land a good coat of stable manure; also sow, broadcast, three hundred pounds of guano, and one hundred and fifty pounds of plaster per acre; plow all in with a large two horse plow, running *close* and as *deep* as the horse can draw it; check it off three and a half feet each way, and draw up hills as high and large as the place will admit of; let one hand go ahead with a stick four feet long and two inches in diameter, sharpened to a blunt point, and make a hole in each six inches deep; open the bed carefully and take out the seed without breaking off the sprouts, and drop one piece in each hill and cover. When the potatoes and grass come up, run one furrow each way with a solid sweep—which will shave off the lower half of the hill—with the hoes shave off the upper half; in two or three weeks, another coat of grass will have come and the potatoe vines be running: run twice in each row, throwing the dirt up to the hills; after plowing out, place the vines in the rows plowed, and plow the others; then cross the plow with a long rooter, running twice in a row, and draw up the hill to its first size with a hoe, leaving the top like a saucer; *particularly avoid covering any part of the vine*; whenever covered they put out roots, which materially diminish their product.

My success was owing to high manuring, deep and thorough cultivation, and an early start, on sandy soil.

The cost of raising was eight cents a bushel! \$20 for manure, and \$10 for cultivating; \$30 per acre—372 bushels, at 8 cents is \$29.76.

They were gathered by plowing—no hoe being used—small hands following the plow and picking

them up—the larger hands cutting off the vines close to the hill with knives and dragging them out of the way, made the gathering easy and expeditious. None were cut and very few left in the ground.

Respectfully yours,

E. T. S.

Wynnton, Jan. 1855.

For the Arator.

GULLEYS AND PLUM SEED.

Mr. Editor: There is no reason why a farmer should allow a gully on his plantation, though you will frequently see farmers leave bald places in their fields, where the soil has washed off, and in a few years, they can't cross it in plowing; whereas if they had sown a handful of plum seed, on the place left uncultivated, the first year, in a very few years they would have had a plum nursery sufficient to have stopped the wash and prevented a gully; and after a very few years more, the "bald place" would have improved to be the best place in the field, and might then be advantageously cleared and cultivated.

FRUIT TREES AND GRAPE VINES.

Let me beg farmers not to get down, as they do to my knowledge, any tree or vine that produces fruit for man or beast; and to make it a rule of their life, to plant at least one fruit tree every year. If you haven't room about the house, plant it off some where—plant Mulberry, Persimmons, Apples, Peaches, and, in fact, any thing you can get. What farmer is there but can tell of some sow and pigs, that were supported by some old mulberry tree, away off from the house? And, by the way, I would earnestly recommend every one to get the "Sampson County" Mulberry and plant it, if they want to raise hogs or poultry.

These things may sound small, but unless we attend to the small things of life, we will not have the large ones to attend to. What is the reason that many people around us are now feeding their horses on New York hay? Because every farmer has not, as he ought to have, a meadow, even if it's a small one. Think of it. Every farmer, nearly, can have one acre of meadow, which can be cut at least three times a season. This of itself would save his cows from the "*hollow-horn*," which every farmer's cows *die* with, though, in fact, it's a larger hollow than the *horn*. Again, I say, attend to the little practical things.

FRANKLIN.

May 18, '55.

MANURE YOUR POTATOES WITH PLASTER AND ASHES.—Whether a specific for the potato rot will ever be discovered, is yet an unsolved problem.—One thing, however, is certain. As the ashes of the potato show that alkali enters largely into its composition, to make it healthy, and insure good crops, ashes are required. One part plaster, and two parts ashes, put in the hill when planting, will well repay the farmer.

NORTH-CAROLINA—HER INSTITUTIONS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.

RALEIGH, N. C. JUNE 1855.

EDGECOMB IMPROVEMENT—A BRIGHT DAY DAWNING UPON NORTH CAROLINA.

Our readers will thank us for calling their special attention to the experience of an intelligent and successful Edgecomb farmer, the plain and unpretending, yet highly interesting and valuable communication of "Vito," in this number of the Arator. We hesitate not to say, extravagant as the opinion may appear to the unawakened and lethargic, this communication alone will add millions to the wealth of North-Carolina. It comes at the right crisis, emanates from the right source, and gives the right information. Thousands of farmers already aroused in every part of the State to a lively sense of the absolute necessity of improving, are hesitating and halting between doubts as to its practicability and ignorance of the safe methods of advancement. It comes to their anxiously inquiring minds with the power of a demonstration, and they can hesitate no longer, but will cast away at once all their doubts and indecision, and enter, with confidence, energy and perseverance, upon the tried & plainly marked path-way to improvement and prosperity. The information given shows that our old worn out lands need only to be replenished with the materials abounding on their premises, to be converted from dreary and sterile wastes into cheerful and fruitful fields and farms on every side—that the diligent and careful collection and application of these means, by every farmer, will lead to these sure and certain results: *it will insure increased crops more than paying for the trouble and expense of improving—giving abundance for consumption on the farm, leaving a handsome surplus for market—and enhancing the money value of the land MORE THAN SIX PER CENT EVERY YEAR.* These well attested facts, brought out by the experience of a *North-Carolina farmer, and showing not what can, but what has been and is still being done in North-Carolina,* cannot fail to open the eyes of our people, when they come to be generally known, and give an impulse to the cause of agriculture that will set the whole State in motion. We hope every newspaper in the State will publish this valuable communication, and call attention to it, for the information of their readers. They and their children after them will be thankful for the favor. It will be seen that ~~the~~ worn-out lands, in six years, are reclaimed and made highly productive, without lime, without marl, and without a cent's expenditure for foreign manures of any kind, except a small quantity of gypsum. A farm that produced, in 1848, with 6 hands, only five bags of cotton and just corn enough for a

support, produced, in 1854, with seven hands, fifty five bags of cotton and two hundred barrels of corn! And the great secret of this result is *thorough draining, deep plowing, and compost manuring*—means in the hands of every farmer in North-Carolina.

These facts are given by the most reliable authority; and we are strongly tempted to publish the name of the author, though he has modestly written under an assumed signature. We will say, however, that from his high character, as a man of honor and as a skilful and successful farmer, the most implicit reliance may be placed in his statements. We shall not hesitate to mention his name, and show his letter to any person who may call at our office desiring it. The whole revenue of the State Agricultural Society could not be better appropriated than as a compensation to him (if he could be induced to do it) to travel through every county and neighborhood in the State, to give to every farmer within its borders the simple facts of his own experience, showing every one how to increase the productiveness of his lands, within the short space of six years, more than three-fold. He has *practically* solved a problem of more vital importance to the people of North-Carolina than that of the *philosopher's stone*; and his name will be honored among her greatest benefactors.

His method is so cheap, so plain, and so easy, that all may practice it, and (as in the case of all great discoveries, when well understood,) almost think it their own, and wonder they had not practiced it before. Let it be generally followed, and in six years the truth of his remark, that North-Carolina may be made the greatest agricultural State in the Union, will be fully verified; and sooner or later, it will; and our glorious old Commonwealth will rival in greatness the Empire State herself. The idea must be electrifying to every patriotic son of North-Carolina; and while it fires our heart with fresh zeal in the labors of the pen, we hope and believe it will stimulate and encourage thousands of noble hearts and brawny arms in the good work of THE PLOW.

The present communication of our esteemed correspondent, is, we trust, but an introduction. He has much valuable information which the people must have, which we hope he will soon and cheerfully furnish. They want the particulars as to *composts*—materials and proportions, how put together, put up, how long to stand, when and how distributed on the land: *Plowing*—when done, what sort of team to turn over the sod, how many inches deep the ground is broken, what kind of plows, harrows, &c. are best for breaking, cultivating, &c.: *Cotton, Corn and Peas*—how planted, modes of cultivation, &c. The public need information upon these and other points connected with them.

Seize every opportunity to increase your manure.

CLARENDON IRON WORKS.

With great pleasure, we copy from the Standard the following article describing this highly important enterprise. By the aid of this, the extensive Iron Works of Mr. Burns, in this city, and others coming into existence, we hope all North-Carolina will be supplied with every cast iron agricultural and domestic implement used in the State. A branch of business for making the woodwork of plows and all other instruments, should be established in connection with these iron works. It could not fail to be profitable to the proprietors, as it would be eminently useful to the public. It will annually save millions to North-Carolina, and will form an important and a most prominent feature in her future greatness. Henceforth, let no citizen of the State import castings from the North that can be procured at home. Our motto is—NORTH-CAROLINA: *HER INSTITUTIONS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.* And let it be inscribed, in large golden capitals, on our public banners—let it be written on the counters, workbenches, door and gate posts, road wagons, carriages, and plows—let it be worn as frontlets by the children, and be stamped, in deep and indelible characters, on the heart of every true son of North-Carolina. We hope the press of the State will publish the subjoined article.

MESSRS. HOLDEN & WILSON—*Gentlemen:* Having made a flying visit to Wilmington, N. C. for the purpose of seeing what was going on in the way of mechanical improvements, and to look about me for some place where I could find a location that would justify a removal, and in the least warrant a permanency in my line of operations, I concluded that it would not be uninteresting to yourselves (from my personal knowledge of the great interest you have always evinced in such matters,) nor to some of your readers, to learn what was really going on in that part of the State, notwithstanding the great "pressure," and very "hard times" in this City.

My visit was most particularly to the "Clarendon Iron Works," and, although I had a description of this establishment in a Wilmington paper, I must confess I was more than surprised to find such an extensive, and admirably arranged establishment. The very gentlemanly and intelligent Superintendent, Mr. Henry M. Drane, kindly interested himself in showing me through the buildings.

The first building we entered was the Foundry, which is 90 x 50 feet 20 feet high. In this there is an improved Cupola, equal to the best in use, capable of melting from one hundred to eighteen thousand pounds of iron at a single blast; arrangements were being made in this department, in the way of powerful cranes and other conveniences, for executing every description of Iron and Brass Castings, from the largest to the smallest. From this we passed into the Boiler Shop, which is 62 x 50 feet and 16 feet high, and is supplied

with all necessary tools for the manufacturing of Steam Boilers. In connection with the Boiler Shop is the Blacksmith Shop, which is also 62 x 50 feet and 16 feet high, and its arrangements are very complete. In this shop they are now using a powerful trip-hammer, and arrangements were being made to erect an improved Steam Hammer for the purpose of heavy forging. Unlike most other blacksmith shops, this is entirely free from the gas and smoke arising from the use of coal, as it is prevented by extraneous flues which lead from each forge to a stack chimney of not less than 100 feet in height, situated between the blacksmith shop & the finishing shop, and through which all the smoke passes away. We next visited the Finishing Shop, which is a very spacious building 100 x 50 feet, three stories high, the lower room 16 feet, and the two upper rooms each 12 feet pitch. In the lower room we noticed quite a number of tools for planing, turning, boring and drilling heavy parts of machinery, such as cylinders, cranks, shafts, pulleys, &c. &c., and preparations were in course of progress, for a machine capable of boring or turning cylinders or fly-wheels, from one to fifteen feet in diameter. On this floor will be fitted up ready for delivery all heavy machinery and castings. The second room, which is very amply filled with lathes, planes, drilling machines, slotting engines, &c. is termed the Finishing Shop, as it is designed in this department to execute all the more delicate & particular branches of turning, planing, filing, and finishing the various parts of brass, iron and steel connected with machinery, preparatory to its erection on the first floor. The third floor is occupied by the Pattern Makers, who are also well supplied with every kind of labor-saving machinery adapted to, and calculated to facilitate their operations. These buildings are all of brick, and are rendered fire proof as far as they could be. The whole of this immense amount of machinery throughout the various buildings is driven by an engine of 40 horse power, which of itself is a model of neatness, beauty and economy, and reflects much credit upon the good taste of the Superintendent in its selection. The engine and boiler room, which is a connecting link between the machine shop and blacksmith shop, is 40 x 20 feet, and is, as well as all the other buildings, well lighted and ventilated, which is a very great desideratum in that locality.

This establishment is designed, as it will deserve to be, the Model Southern Machine Shop, and as I was informed by a highly intelligent gentleman, (one of the proprietors,) that it is the intention of the Company to fully test the question, whether or not a Machine Shop can be sustained in North Carolina. From the knowledge I have of the business, and the character of the gentlemen connected with it, I look upon it as a certainty: as no Southern man within the reach of this establishment, either by land or water, would do justice to the South, by passing it by, in search of any kind of machinery coming under their legitimate business, for I am well satisfied from their advantages of manufacturing and shipping, that machinery can be manufactured in Wilmington and delivered in any of the Southern States as

cheap, all things considered, as it can be purchased and delivered from any Northern manufactory; and it is now for the people of North Carolina particularly to say whether or not this establishment shall be sustained, and made, as it will be, an ornament to the State.

Yours, very truly, ENGINEER.

RAIN.

We had a fine rain, after an unprecedented drought for the season, on Thursday night, the 19th of May, which has been refreshing to vegetation, and another on the morning of the 23rd, which, together with the former, has revived the drooping wheat and oat crops, and brought up the corn and cotton which had been retarded by the drought. The first rain was general in South-Carolina, and we believe, throughout this State.—But we regret to learn that much of the early wheat in the upper country was injured beyond recovery before the rains came.

We were favored with rain again on the 28th.

BEAUFORT THE TERMINUS.

We learn from the *Halcyon*, that the Directors of the Atlantic Railroad, at a full meeting on the 15th May, fixed the eastern terminus of said road within the Corporate limits of the town of Beaufort.—We repeat the prediction, which we made long ago—then “hoping against hope,” and prophecying against the universal opinion entertained by our people, (that they were hopelessly and forever bound in the commercial chains of other States,)—that Beaufort will become a great commercial city, the emporium of the trade of North-Carolina, our deliverer from commercial shackles, and the source and centre of commercial independence, wealth and greatness to North-Carolina, whose “manifest destiny” is to become one of the very greatest agricultural, manufacturing, and commercial States of this powerful and wide extended Union. We congratulate the people of Carteret.—we congratulate the citizens of the whole State, on the cheering prospects which are opening before them. “The dawn of a bright day” is not only now before the citizens of Carteret, but is radiating the State from seaboard to mountain, from centre to circumference.

NEWS ITEMS.

The Beaufort *Halcyon* says there is no doubt that all the stock necessary to secure the State subscription to the Atlantic and North-Carolina Railroad, will be subscribed before the meeting of the Stockholders in July next.—There was never a better prospect for heavy wheat crops, than is reported to appear in Indiana.—More than half the people near Dayton, Georgia, are reported to

be in a starving condition.—The seven-year locusts have made their appearance in the vicinity of Hillsborough and other localities.—The Fayetteville Observer says corn in that place, on the 21st May, was selling at \$1.30 a bushel from wagons, and retailing at \$1.50 a bushel.—A rattle snake was killed near Charleston, with 35 rattles and a button, indicating it was in its 36th year.—A fire in Petersburg, on the 17th, destroyed 12 stores on Bollingbrook street, with a loss of \$150,000, mostly insured.—A thousand families have been driven from the City of New-York by hardtimes—a hardmaster.—Quantities of grain and flour are coming into the United States from Canada, where there is a surplus. The Reciprocity Treaty, lately concluded between the United States and Great Britain, admits such articles duty free.—The Atlantic, which sailed last Wednesday for Liverpool, carried \$1,894,000 in specie—the largest amount ever exported in one vessel.—The Atlantic and N. C. Railroad, has been put under contract from Goldsboro to Newbern, and has been surveyed from Newbern to Beaufort, and a part of that end of the line will soon be let out.—The price of guano, according to the Peruvian charge d'affaires at New-York, is not to be reduced, as has been reported; but, on the contrary, if any change is made, he says it will be advanced.—The Legislature of Massachusetts has passed an act, (over the veto of the Governor,) nullifying the fugitive slave law; but the Attorney General pronounces it unconstitutional and nugatory.—The amount of cotton burnt and lost at sea, this year, is estimated at 40,000 bales.—The Picayune's accounts of the cotton crop are not unfavorable.

CAUSES OF WANT.

An article copied from the Fayetteville Observer, of very deep and absorbing interest to the whole people of North-Carolina, will be found in this number of the *Arator*. No reflecting man, whatever his vocation or profession, can fail to read it with interest. It points to the true causes of our pecuniary embarrassments, and scanty supplies of provisions, and suggests the remedy—increased attention to agricultural, mechanical and manufacturing pursuits. We must produce more and import less; we must improve our farms, encourage our own mechanics, promote home manufactures—make our own implements, shoes, cotton and woolen cloths—raise our own mules, horses, and hogs and the grain and hay to feed them—make our own butter, cheese, &c. With the power of becoming the greatest agricultural State in the Union, it is a burning shame that the State is reduced to its present humiliating condition.

The Premium List, published in our May number, (though, as was apparent on its face, not complete,) we are authorised to say by Dr. Crudup, the Chairman, had been adopted by the Executive Committee, and was put to press in its incomplete state, with the view of placing the leading premiums, which it embraced, before the public as early as practicable—leaving the various committees, blanks, and additions that might be deemed proper, to be subsequently supplied; and when thus perfected, it was contemplated the list would be printed for distribution among the people. Said list was revised and completed by the Committee at its meeting in May, and we again insert it for the information of our readers—omitting the name of "W. D. Cooke," which is attached to it in the Extra of the Cultivator as "*See'y Ex. Com.*" because we are informed by the Chairman that Mr. Cooke has never been appointed Secretary of that Committee.

LIST OF PREMIUMS

TO BE AWARDED

At the third Annual Fair of the N. C. State Agricultural Society, to be held at Raleigh, 16th, 17th, 18th and 19th October, 1855.

BRANCH FIRST—LIVE STOCK.

FIRST DIVISION.

First Class—Thorough Bred.

1	For the best Stallion over four years old,	\$ 25
2	" 2d " do " "	15
3	" " Brood-Mare " "	15
4	" 2d " do " "	10
5	" " Stallion over 2 & under 4 yrs. old,	10
6	" " Mare " 2 " 4 "	10

In this class purity of blood being the highest point of distinction, a well authenticated pedigree must, in every case, accompany each animal put on exhibition to compete for any of the above prizes.

Second Class.—Quick Draught and Saddle Horses.

1	For the best Stallion over 4 years old;	\$ 20
2	" 2nd " do " "	10
3	" " Brood-Mare,	10
4	" 2nd " do "	5
5	" " Stallion over 2 & under 4 yrs. old,	10
6	" " Mare " 2 " 4 "	10
7	" " Saddle-Horse, mare or gelding,	10
8	" 2nd " do do do "	5
9	" " pr. matched Carriage-Horses, raised in the State,	20
10	" 2nd " do do "	10
11	" " Single-Harness Horse, raised in the State,	10
12	" 2nd " do do "	5

In this class, individual excellence in form, action and disposition, will be regarded as chief points of merit.

Third Class—Heavy Draught Horses.

1	For the best Stallion over 4 years old.	\$ 20
2	" 2nd " do "	10

3	" " Brood-Mare over 4 years old,	15
4	" 2nd " do "	10
5	" " Stallion over 2 & under 4 yrs. old,	10
6	" " Mare " 2 " 4 "	10
7	" " pr. heavy Draught-Horses, raised in the State,	10

In this class, form, size, and docility, will be regarded as chief excellences.

JACKS AND JENNETTES.

IMPORTED.

1	For the best Jack, with approved certificates,	\$ 20
2	" " Jennette, " "	10
RAISED IN THE STATE.		
1	" " and largest Jack,	20
2	" " " Jennette,	10

MULES.

1	For the best pr. of Mules (raised in the State)	10
2	" " single Mule " "	5

SECOND DIVISION.

CATTLE.

First Class—Short-horns or Durhams.

1	For the Best Bull over 3 years old,	\$ 15
2	" " do " 2 " and under 3,	10
3	" " do " 1 " and under 2,	5
4	" " " Calf,	3
5	" " Cow over 3 years old,	10
6	" " do. " 2 " and under 3,	5
7	" " Heifer Calf,	3

The same classification adopted, and the same premiums offered for Devons.

AYRSHIRES.

1	For the best Bull,	\$ 15
2	" " Cow,	10

ALDERNEYS.

1	For the best Bull,	\$ 15
2	" " Cow,	10

HEREFORDS.

1	For the best Bull,	\$ 15
2	" " Cow,	10

GRADES OR MIXED BLOOD AND NATIVE CATTLE.

1	For the best Bull,	\$ 15
2	" " Cow,	10

IMPORTED CATTLE.

(Where the word imported, is used, it is understood the animal must be brought from beyond the United States.)

1st	For the best Bull,	\$ 20
2	" " Cow,	10

WORKING OXEN.

1	For the best p'r Work Oxen,	\$ 10
---	-----------------------------	-------

FAT CATTLE.

1	For the best lot of fat cattle not less than 3	\$ 10
2	" " " Single fat ox or cow,	5
3	" " " Spayed Heifer,	5

MILCH COWS.

1st	Best Milch cow, giving not less than 20 quarts on exhibition,	\$ 20
2	2nd " " " not less than 16 do	10

THIRD DIVISION.

SHEEP.

First Class—Merino, Cotswold, and South-down.

- | | | |
|---|-------------------------------------|------|
| 1 | For the best Buck, | \$20 |
| 2 | " " " Pen of Ewes (not less than 3) | 15 |
| 3 | " " " " Lambs, " " " " | 10 |

Second Class—Natives or Grades.

- | | | |
|---|-----------------------------------|------|
| 1 | For the best Buck, | \$10 |
| 2 | " " " Pen Ewes (not less than 3.) | 10 |
| 3 | " " " " Lambs, " " " " | 5 |

GOATS.

- | | | |
|---|----------------------------------|------|
| 1 | For best pair of Cashmere Goats, | \$10 |
| 2 | " " " " Alpacaas, | 10 |
| 3 | " " Milking Goat, | 5 |

FOURTH DIVISION.

SWINE.

First Class—Large Breed.

- | | | |
|---|---|-----|
| 1 | For the best Boar over 2 years old, | \$5 |
| | Breeding Sow do. | 5 |
| 2 | " " " Breeding Sow over 2 year old with not less than 4 Pigs, | 5 |
| 3 | " " " lot of 6 Pigs under 10 months old, | 5 |
- This class includes Berk-Shires, Chesters, Woburns, Graziers, Bedford and Duchess County; and their grades, size, form, and fitness as pork hogs, will be the chief objects of attraction.

Second Class—Small Breed.

- | | | |
|---|---|-----|
| 1 | For the best Boar over 2 years old, | \$5 |
| 3 | " " Breeding Sow, | 5 |
| 3 | " " " Breeding Sow, " 2 " and not less than 4 Pigs, | 5 |
| 4 | " " " lot of 6 Pigs under 10 months old, | 6 |
- In this class is included Suffolk, Essex, Neapolitan, Chinese, Guinea, Snap-Dragon, & their grades, & will be regarded chiefly for their fattening qualities.

Third Class—Natives.

- | | | |
|----|---|------|
| 1 | for the best Boar over 2 years old, | \$10 |
| 2 | " " 2nd " " " " " | 5 |
| 3 | " " Breeding Sow, | 10 |
| 4 | " " " Breeding Sow with 4 pigs, | 10 |
| 5 | " 2nd " " " " " | 5 |
| 6 | " " " Boar or Sow, | 5 |
| 7 | " 2nd " " " " " | 3 |
| 8 | " " " lot of 6 Pigs under 10 months old, | 5 |
| 9 | " " " lot of 10 fat hogs of any breed, | 10 |
| 10 | " " " Single fat hog (raised in the State,) | 5 |

POULTRY.

- | | | | |
|--------------------|-----|--------------------------|----|
| Best p'r Shanghai, | \$3 | Best pr. Common Geese, | 3 |
| " " Dorkings, | 3 | " " Mus'y Ducks, | 3 |
| " " Polands, | 3 | " " Rouen " | 3 |
| " " Brahmas, | 3 | " " Aylesbury, | 3 |
| " " Cochins, | 3 | " " Pea Fowls, | 5 |
| " " Black Spanish, | 3 | " " Picd Guinea Fowls, | 3 |
| " " Game " | 3 | " " White do do " | 3 |
| " " Cross-Breed, | 3 | " Exhibition of Pigeons, | 5 |
| " " Wild Turkey, | 3 | " and largest exhibi- | |
| " " Domestic " | 3 | of Poultry by one | |
| " " Chiuwa Geese, | 3 | exhibitor. | 10 |
| " " Canada " | 3 | | |

BRANCH SECOND.

AGRICULTURE.

Frist Class—Field Crops—(In the State.)

To be awarded by the "Ex. Com." at a meeting to be held for that purpose in December next.

- | | | |
|----|--|------|
| 1 | For best Crop of Wheat, not less than five acres, nor less than 40 bushels per acre, | \$20 |
| 2 | For Second do do | 10 |
| 3 | Best crop of Indian corn not less than five acres, to be shelled and weighed between the 15th of Nov. and the 15th of Dec, not less than 100 bushels per acre, | 20 |
| 4 | Second best do do | 10 |
| 5 | Best crop of Barley, not less than one acre, nor less than 50 bushels per acre, | 10 |
| 6 | Best Crop of Rye, not less than one acre, nor less than 40 bushels per acre, | 10 |
| 7 | Best crop Oats, not less than one acre, nor less than 50 bushels per acre, | 10 |
| 8 | Best Crop of Buckwheat, not less than one acre nor less than 30 bushels per acre, | 10 |
| 9 | For the best crop of Rice not less than 10 acres, nor less than 75 bushels per acre, | 10 |
| 10 | Best crop of Beans or Peas, not less than one acre, nor less than 25 bushels per acre, | 10 |
| 11 | Best crop of Ground Peas, not less than one acre, nor less than 70 bush. to an acre, | 10 |
| 12 | Best crop of Cotton on not less than 4 acres, | 20 |
| 13 | Second best do do | 10 |
| 14 | Best crop of Pea Vine Hay, raised on 2 acres, one bale to be sent as a sample to the State Fair, | 5 |
| 15 | Best crop of Native Grass Hay raised on 2 acres, one bale sent as a sample, | 5 |
| 16 | Best Crop of Foreign Grass Hay raised on 2 acres, one bale sent as a sample, | 5 |
| 17 | Best crop of Sweet Potatoes, not less than $\frac{1}{2}$ of an acre, nor less than 300 bushels to the acre, | 10 |
| 18 | " " " Irish " not less than $\frac{1}{2}$ an acre, nor less than 400 bush. per acre, | 10 |
| 19 | Best crop of Turnips raised per acre, | 5 |
| 20 | " " " Turnips not less than half an acre, nor less than 500 bush. to the acre, | 10 |
| 21 | Best crop of Beets, not less than $\frac{1}{2}$ an acre, 60 lbs. per bushel, nor less than 400 bushels per acre, | 5 |
| 22 | Best crop of Carrots, (with same conditions as for beets) | 5 |
| 23 | Best crop of corn-fodder, not less than one acre, with an account of culture, preservation, &c. | 5 |
| 24 | Best crop of Tobacco, not less than 4 acres, | 10 |
| 25 | " $\frac{1}{2}$ acre of Hops, with full account of cultivation and preservation, | 5 |
| 26 | Best $\frac{1}{2}$ acre of Flax, with same account as last, | 5 |
| 27 | " " " Hemp. " " " " | 5 |
| 28 | " " " Clover Seed " " " " | 5 |
| 29 | " " " Timothy Seed " " " " | 5 |
| 30 | " " " Broom Corn, do, do, | 5 |
| 31 | " 5 " " Flax Seed, not less than 12 bushels per acre, | 5 |
| 32 | Best half acre mustard seed, | 5 |
| 33 | For the best average product, to the acre throughout the entire crop, of Wheat, Tobacco, Corn or Cotton, | 10 |
| 34 | For the best crop of Dora Corn, not less than 1 acre. | 5 |

35 For the best specimen of Ozier Willow, discretionary premium.

Statements to be made by competitors on Field Crops.

1. The land must be measured by some competent person, who shall make affidavit of the accuracy of the measurement, and the quantity of ground.

2. The applicant shall make affidavit, according to the forms annexed, to the quantity of grain raised on the ground, entered on the premium list, which affidavit must accompany the application for premiums, together with a sample of the grain.

3. The principal object of the Society being to promote profitable cultivation, it does not offer premiums for crops produced by extravagant expenditure; therefore, a detailed certified, account of the expense of cultivation, must be made; the expense of labor and manures stated; and the kind of manure used.

4. The kind and condition of soil; the quantity and kind of seed used. The time and mode of planting or sowing, stated.

Samples of grain and vegetables produced, to be exhibited at the State Fair, where practicable, and also to be sent to the Ex. Com. at Raleigh prior to the meeting of the Committee in December.

5. The grain must either be weighed or measured in a legal half bushel, corn to be measured in the ear, & an average specimen of not less than 20 bushels of ears shelled, cleaned, and weighed or measured, as above, after the 15th of Nov., and the number of bushels thus estimated, stated in the affidavit.

FORMS OF AFFIDAVIT.

County, S. S. — A. B., being duly sworn, says he accurately measured the land upon which C. D. raised a crop of — the past season, and the quantity of land is — acres and no more. [Signed] A. B.

Sworn to before me, this — day of —, 185 —, Justice.

County, S. S. — C. D., being duly sworn, says he raised a crop of — the past season upon the land measured by A. B., and that the quantity of grain raised thereon was — bushels and no more, (or measured in a seal half bushel as the case may be,) and that the statements in regard to the manner of cultivation &c. are correct to the best of my knowledge. (Signed) C. D.

Sworn to before me, this — day of —, 185 —, Justice.

Second Class—Agricultural Productions, Raised by the Exhibitor.

1	For the best variety of Bread Corn,	1 bush.	
		as sample,	\$3
2	" "	" " Stock " 1 do. do.	3
3	" "	" " Wheat, 1 do. do.	3
4	" "	" " Oats, 1 do. do.	3
5	" "	" " Rye, 1 do. do.	3
6	" "	" " Barley, 1 do. do.	3
7	" "	" " Rice, 1 do. do.	3
8	" "	" " Field Peas, 1 do. do.	3
	" "	" " Ground Peas, 1 do. do.	5

9	" "	" Sweet Potat's 1 do. do.	3
10	" "	" " Irish do. 1 do. do.	3
11	" "	" " Cotton, 2 Stalks as Sample,	2
12	" "	" " Grass Seeds adapted to the	
		South for Hay or Grazing,	5
13	For best specimen of Cotton,	50 lbs. in seed,	5
14	" the greatest variety of the above articles	raised on one farm.	10
15	" " best specimen of Virgin Dip Turpen-	tine, one barrel as sample.	3
16	" " " Rosin, 1 bbl. as sample,		3
17	" " " Hemp prepared or dressed,		3
18	" " " Flax " "		3
19	" " " Maple Sugar,		3
20	" " " Leaf Tobacco, not less than	10 pounds,	3

Third Class—Farm Products.

1	For the best half-barrel Pickled or Mess Beef,	\$5	
2	" " " " " " " " " " " " " " " "	5	
3	" " " 1/2 dozen Bacon Hams regardless		
		of age,	5
4	" " " 1/2 " Mutton or Vension Hams,		5
5	" " " 1/2 " Barrel Roe and Cut Herrings,		5
6	" " " 1/2 " Shad,		5
7	" " " 1/2 " Mulletts,		5
8	" " " 1/2 " Mackerel,		5

Exhibitors must state in full, in writing, the mode of Pickling the Beef and Pork, and curing and Preserving the Bacon.

DAIRY.

1	Best jar of Fresh Butter, not less than 5 lbs.,	3
2	" firkin of Butter 6 mo's. old not "	20 " 5
3	" " New Cheese,	2
4	" " " 12 months old,	3

The process of making and preserving the butter and cheese, must be given in full by the exhibitor.

FOOD, CONDIMENTS, &c., &c.

1	For the best specimen of Wheat Flour, not less than 1 barrel,	\$10
2	" 2nd " " do. do. do.	5
3	" " " Corn Meal, 1 barrel,	3
4	" " " Rice Flour, $\frac{1}{2}$ "	5
5	" " " Buckwheat Flour $\frac{1}{2}$ barrel,	5
6	" " " Oat & Rye meal $\frac{1}{2}$ "	3
7	" " " Starch from Wheat, Potatoes &c. 5 lbs. sample,	3
8	" " " Flour Bread 3 Loaves,	2
9	" " " " Roles $\frac{1}{2}$ doz.	2
10	" " " Corn Bread 3 Loaves,	2
11	" " " Honey (strained) $\frac{1}{2}$ gal.	2
12	" " " " in Comb 5 lbs.	2
13	" " " Crackers, Soda, (butter, and water,) 10 lbs.	5
14	For the largest exhibition of Jellies, Preserves, Pickles, Jams, Catsups, Syrups, Cordials, &c. &c., made and exhibited by the same individual,	\$5
15	For the best specimen of the following dried fruits, Peaches, Apples, Pears, Figs, of each not less than half bushel—Grapes, Plums, Cherries, Whortle-Berries, of each not less than ten lbs., for each,	2
16	For the best and greatest variety of the above dried fruits made and exhibited by the same individual,	\$5
17	For the best specimen of Domestic Wine, not less than $\frac{1}{2}$ doz. bottles,	\$5

- 18 For the best and greatest variety of domestic wines, $\frac{1}{2}$ doz. bottles of each variety, \$10
 19 For the best specimen of Linseed, Turpentine, Castor, Cotton Seed, Olive, Fennel, or any other variety of Oil, made in the State, and prepared by the exhibitor, \$3

Fourth Class—Horticulture.

FRUITS ADAPTED TO THE SOUTH.

- | | | |
|---|----------------------------------|-----|
| 1 | Best and largest variety Apples, | \$5 |
| 2 | " " " Pears, | 5 |
| 3 | " " " Peaches, | 5 |
| 4 | " " " Quinces, | 5 |
| 5 | " " " Figs, | 5 |
| 6 | " " " Grapes, | 5 |

Fruit Trees adapted to the South.

- | | | |
|---|--|---|
| 1 | Largest and best variety of Apple Trees, | 5 |
| 2 | " " " Pears, | 5 |
| 3 | " " " Peach, | 5 |
| 4 | " " " Strawberry vines, | 1 |
| 5 | " " " Raspberry " | 2 |
| 6 | " " " Gooseberry, | 1 |
| 7 | " " " Cranberries, | 1 |

Vegetables.

- | | | |
|---|--|-----|
| 1 | 6 Best stalks of Celery, | \$2 |
| 2 | 6 " Cauliflower, | 2 |
| 3 | 6 " Broccoli, | 2 |
| 4 | 6 " Cabbage, | 2 |
| 5 | 2 " Egg Plants, | 1 |
| 6 | " Variety of Squash, | 1 |
| 7 | " Peck Onions, | 1 |
| 8 | " Sugar Beets, Carrots, Parsnips, Turnips, | 1 |
| 9 | " $\frac{1}{2}$ dozen of each, for each, | 1 |
| | " Pumpkins | 1 |

BRANCH THIRD.

MECHANICS.

First Class—Plows, &c.

- | | | |
|----|---|--------|
| 1 | For the best Side Hill Plow, | \$10 |
| 2 | " " Double Mould Board do., | 5 |
| 3 | " " Cast Mould Board one horse do. | 10 |
| 4 | " " " " Two do do. | 10 |
| 5 | " " Wrought " " One do do. | 10 |
| 6 | " " " " Two do do. | 10 |
| 7 | " " " Subsoil. | do, 10 |
| 8 | " " " Cotton Scraper, | 10 |
| 9 | " " " Sweep, | 5 |
| 10 | " " " Toothed Cultivator, | 5 |
| 11 | " " " Harrow, | 5 |
| 12 | " " Horse Rake, | 5 |
| 13 | " " Iron Roller, smooth, | 5 |
| 14 | " " " Pegged, | 5 |
| 15 | " " Weeding Harrow Plow, | 5 |
| 16 | " " Farm Gate, | 5 |
| 17 | " " and greatest variety of Agricultural implements manufactured in the State, by the exhibitor or under his supervision, | \$25 |

Second Class—Farm Vehicles &c.,

- | | | |
|---|---------------------------------------|------|
| 1 | For the best 4 or 6 Horse Road-Wagon, | \$20 |
| 2 | " " 2 do. do. | 10 |
| 3 | " " 1 do. do. | 5 |
| 4 | " " Horse Cart, (tumble) | 5 |
| 5 | " " Ox Cart and Yoke, | 5 |
| 6 | " " Wheel barrow, | 2 |
| 7 | " " Dumping Wagon, | 5 |
| 8 | Best p'r Wagon or Plow Hames, | 2 |
| 9 | " Cart Saddle, | 2 |

- | | | |
|----|----------------------------------|------|
| 10 | " Ox Cart Wheels, | 3 |
| 11 | " 2 Horse Pleasure Carriage, | \$25 |
| 12 | " Phaeton, Rockaway or Top Buggy | 15 |
| 13 | " Open Buggy or Sulkey, each, | 10 |

Third Class.—Machinery,

STEAM POWER.

- | | | |
|---|---|-------|
| 1 | Best Steam Engine for agricultural purposes, at work on the ground, | \$ 25 |
| 2 | " Locomotive Engine, | 25 |
| 3 | " Railway rolled iron, specimen of a ton manf'd | 25 |
| 4 | " Pig Iron ditto | 15 |

HORSE POWER.

- | | | |
|----|---|-------|
| 1 | Best Sweep Horse Power, | \$ 15 |
| 2 | " Railway " " | 15 |
| 3 | " Saw and Grist Mill, Corn and Cob Crusher and Threshing Machine, each, | 15 |
| 4 | " Broadcasting and Drilling Machine, for grain or grass, | 10 |
| 5 | " Broadcasting Machine for sowing Bone dust, Lime, &c., &c. | 10 |
| 6 | " Ditching Machine, | 5 |
| 7 | " Cotton Gin, | 20 |
| 8 | " Reaping Machine, | 20 |
| 9 | " Mowing Machine, for grass, | 10 |
| 10 | " Hay Press, | 10 |
| 11 | " Cotton do. | 10 |
| 12 | " Brick Machine | 20 |

HAND POWER.

- | | | |
|----|-------------------------------|------|
| 1 | Best Fanning Mill, | \$ 5 |
| 2 | " Corn Sheller, | 5 |
| 3 | " Straw and Shuck Cutter, | 5 |
| 4 | " Corn-Planter or Drill, | 5 |
| 5 | " Wheat do do | 5 |
| 6 | " Shingle Machine, | 5 |
| 7 | " Pump or Hydraulic Machine, | 5 |
| 8 | " Smut Machine, | 10 |
| 9 | " Churn, | 5 |
| 10 | " Sewing Machine, | 5 |
| 11 | " Sausage Cutter and Stuffer, | 3 |
| 12 | " Grain Cradle, | 5 |
| 13 | " Plantation Mill, | 5 |

Fourth Class.—Saddlery, &c.

- | | | |
|----|---------------------------------------|------|
| 1 | Best set Carriage Harness, | \$15 |
| 2 | " Buggy or Sulkey do. | 10 |
| 3 | " Gents. Saddle, Bridle & Martingals, | 5 |
| 4 | " Ladies' " " " | 5 |
| 5 | " set 4 Horse Wagon Harness, | 5 |
| 6 | " " 2 do do do | 5 |
| 7 | " " 1 do do do | 3 |
| 8 | " Cart Harness, | 3 |
| 9 | " Plow do - - - - | 3 |
| 10 | " Halter and Collar or Pad, - - - | 3 |

CABINET WORK.

- | | | |
|----|---------------------------------|------|
| 1 | Best Bedstead, | \$ 5 |
| 2 | " Cradle or Crib for Children, | 3 |
| 3 | " Rocking Chair, | 3 |
| 4 | " Half dozen Sitting Chairs, | 3 |
| 5 | " Centre Table, | 3 |
| 6 | " Wash Stand, | 3 |
| 7 | " Sofa or Settee, | 5 |
| 8 | " Wardrobe, | 5 |
| 9 | " Sideboard or Bureau, | 5 |
| 10 | " Desk, Book-Case, &c. | 5 |
| 11 | " Window Sash and Blinds, each, | 5 |
| 12 | " Pannel Door, | 5 |

SHOES, HATS, &c.

- | | | |
|---|---------------------------------|------|
| 1 | Best pair of Gentlemen's Boots, | \$ 3 |
| 2 | " " do Shoes, | 2 |
| 3 | " half dozen Brogans, | 3 |

4	"	Dress Hat, silk or fur,	-	3
5	"	Plantation Hat,	-	3
6	"	half dozen Wool Hats,	-	3
7	"	Straw or Grass,	-	2
8	"	made Gentlemen's Coat, Pants. and Vest,	10	

Fifth Class.—Sundries.

1	Best lot of Guns,	-	\$5
2	" " Stone Ware, Glass Ware, or Earthen Ware, each,	5	
3	" " Cast (hollow) Ware, as Pots, Kettles, &c.	5	
4	" " Wood ware, (hollow,) as Buckets, Tubs, Keelers, &c. &c.	5	
5	" " Casks, Barrels, &c.	5	
6	" " Leather, Sole, Kip and Calf,	5	
7	" " Side of Harness Leather,	3	
8	" " Dressed buck, sheep or goat skins	5	
9	" " Lot of Baskets for farm use,	5	
10	" " Tin Ware,	3	
11	" " Edged Tools,	10	
12	2nd best lot do do	5	
13	For the best and grettest variety of Mechanics' Tools, made in the State,	5	
14	Best lot Manufactured Tobacco, Chewing,	10	
15	" " do Smoking,	3	
16	" " Cigars,	5	
17	" " Tallow Candles,	5	
18	" " Soap, with process of making,	3	

BRANCH FOURTH.

MANUFACTURES.

First Class.—Mill Fabrics.

1	Best piece 1 yard Broadcloth,	\$ 10
2	" " 1 " Cassimere,	5
3	" " 1 " Sattinett,	5
4	" " 1 " Woolen Jeans,	5
5	" " 1 " Linsey or Kersey,	5
6	" " 1 " Flannel, plain and twilled,	5
7	" pair of Blankets,	3
8	" " Felt Blankets,	3
9	" piece 1 yard Woolen Carpet,	5
10	" Hearth Rug,	5
11	" piece 1 yard Linen, (bleached,)	5
12	" " 1 do do (brown,)	5
13	" " 1 Tow Cloth,	3
14	" " 3 yards Osnaburgs,	5
15	" " 3 " Shirting and Sheeting,	5
16	" " 3 " Bed-ticking,	5
17	" " 3 " Cotton Jeans,	5
18	" Bale Cotton Yarn, (all the numbers,)	5
19	" Cotton Sacking, 30 yards,	5
20	" lot Cotton Twine,	2
21	" " Paper, printing, letter, cap. &c. &c.	5
22	" Coil of Rope, hemp, cotton, or bear grass,	5
23	" Mattress, hair, moss, shuck or cotton,	5

Second Class.—Household Fabrics.

1	Best Counterpane,	3
2	" Bed-Quilt, (Cotton,)	5
3	" do (Silk,)	3
4	" Home-made Carpet,	3
5	" pair home-made Blankets,	3
6	" " Hearth Rug,	3
7	" pair Yarn Hose,	1
8	" " home-made Silk Hose,	2
9	" Woolen Shawl,	2
10	" Foot Mats,	2
11	" piece 10 yards (Negro) Woolen Cloth,	3
12	" " 10 " Rag Carpet,	3
13	" " Knit Counterpane	10

BRANCH V.—Experiments and Essays.**EXPERIMENTS.**

For each of the two best experiments, or series of experiments, on any of the following subjects, a premium as follows:

1. Effects (in profit or loss) of the usual mode of saving corn fodder, by stripping the green blades and cutting off the tops, \$10

2. Cost and effects of sub-soil plowing, under different circumstances of soil and sub-soil, 10

3. Action or non-action of lime as manure above the falls of the tide-water rivers. 10

4. Action or non-action of gypsum below the falls of the tide-water rivers, and on soils respectively rich and originally poor, and on the latter, after as well as before their being made calcareous, 10

5. Cost and effects of bone-dust, (or phosphate of lime,) as manure, 10

6. How late in reference to the growth, the last tillage (by plow or cultivator,) should be given to corn for the best product; and whether the said last tillage should be shallow or deep. 5

7. Best series of comparative experiments in the cultivation of corn, 10

8. Benefits and products of guano, compared to costs; to be tested by not less than three different experiments, made under circumstances more or less different, 10

9. Benefits or profit of preserving or applying human excrements as manure, whether prepared for sale and distant transportation, or otherwise, but the whole operation to be in North-Carolina. 10

10. Tide marsh mud, or swamp muck, or peaty soil, (either kind to be accurately described and characterized,) as manure, in compost with lime or otherwise, 10

11. Value of charcoal as an aid to fertility. 5

12. Value of sulphate of barytes as a manure, especially for clover, 5

13. Tobacco.—Culture, cost and profits of cultivating, and comparative effects on production, from different distances of planting, modes of priming, topping, &c., comprising at least three different experiments, 10

14. Cultivation and comparative feeding value of rye. 5

ESSAYS OR WRITTEN COMMUNICATIONS.

For each of the best five on any of the following subjects, a premium, as follows:

1. On improving and enriching poor land—whether naturally poor, or naturally rich, or good, and subsequently exhausted by severe cropping, 5

2. On draining, 5

3. On rotation of crops, 5

4. On the accumulation, preparation and application of stock yard and stable manure, 10

5. On the "green sand" or gypseous earth of lower North-Carolina as manure—

and the facts and causes of effect or non-effect,

6. On the properties and value of the Southern Pea (or "cornfield pea" of any variety,) and the culture thereof, whether for saving the pea ripened, or ploughing under the growth, green or dry, for manure, and as a preparation for wheat or other grain crops,

7. On the comparative profit of planting and farming, and of the two combined—improvement of land being considered,

MINERALS, &c.

1 For the best collection of useful Minerals of the State, including Coals, Iron Ore, Copper Ore, Limestones, Marbles, Sandstones, Marls, Peats, Soils, &c., discretionary premium.

DISCRETIONARY PREMIUMS

Will be awarded for contributions to Floral Hall.

Works of art and taste, needle-work, paintings, drawing, &c. &c.

E. A. CRUDUP, *Chmn Ex-Com.*

Rules and Regulations for the government of the Fair, to be held October, 1855.

1. All members of the N. C. State Agricultural Society will be furnished with a badge of membership, upon payment of the annual tax of \$3, and will be required to wear the same during the Fair. This badge will admit the ladies of his family and children under fifteen years of age.

2. Members of the Society and their families alone will be admitted on Tuesday, the day for examination and awards by the judges. All competitors are expected to be present. The public will be admitted on and after Wednesday, at 10 o'clock. Price of admission 25 cents. Children and servants 12½ cents. Clergymen, Editors and Pupils of charitable Institutions admitted free.

3. Agricultural Societies and Institutions from from other States are invited to send Delegates—Such Delegates will be presented with a complimentary card.

4. All exhibitors who intend to compete for the premiums of the Society, must become members of the same and have their articles on the ground and entered at the Secretary's Office in Reception Hall, at or before 5 o'clock on Monday evening, Oct. 15th, without fail, so that they may be arranged in their respective departments, and in readers for examination by the Judges on Tuesday morning at 10 o'clock.

5. The regulations of the Society must be strictly observed by exhibitors, otherwise the Society will not be responsible for the omission of any article or animal not entered under its rules.

6. No article or animal entered for a premium can be removed or taken away before the close of the exhibition. No premium will be paid on articles or animals removed in violation of this rule.

7. All articles and animals entered for exhibition must have cards attached with the number as entered at the Secretary's Office; and exhibitors in all cases must obtain their cards previous to placing their articles or animals on the Fair grounds.

8. Those who wish to offer animals or articles for sale during the Fair must notify the Secretary of such intention at the time of entry.

9. The Executive Committee will use every precaution in their power, for the safe preservation of all articles and stock on exhibition, and will be responsible only for loss or damage that may occur during the Fair. Exhibitors must give attention to their articles or animals during the Fair, and at the close of the exhibition attend to their removal.

10. The awarding committees or judges, selected for the next Fair, are earnestly requested to report themselves to the chairman of the Executive Committee at Reception Hall, upon the grounds of the Society, on Tuesday morning, the 16th day of October, 1855.

11. In no case can the Judges award special or discretionary premiums; but will recommend to the Executive Committee any articles in their class which they may deem worthy of special notice and for which a premium has not been offered.

12. The Judges on animals will have regard to the symmetry, early maturing, thorough breeding, and characteristics of the breeds which they judge.—They will make proper allowances for the age, feeding and condition of the animals, especially, in the breeding classes, and will not give encouragement to over fed animals.

13. No stock of inferior quality will be admitted within the grounds; a committee will be appointed to rule out all below a medium grade.

14. Animals to which premiums have been awarded must be paraded around the track, that visitors may see the prize animals.

15. No person will be allowed to interfere with the Judges during their adjudications.

16. The several Superintending Committees will give particular direction to all articles in their departments, and see that all are arranged in the best order possible to lessen and facilitate the labors of the Judges in their examination.

17. The Superintendents will attend each set of Judges in their respective departments and point out the different articles or animals to be examined, will attach prize cards to the articles, or flags to the successful animals after the Judges' reports have been made up and delivered to the chairman of the Executive Committee.

18. The Judges will withhold premiums on animals or articles in their opinion not worthy; though there be no competition.

19. Animals having received premiums of the Society at previous exhibitions, will not be allowed to compete for prizes again in the same class.

20. Stock brought to the Fair for sale, will have an enclosed lot adjoining the Fair grounds assigned them with water convenient, where they can be kept at the expense of the owner.

21. Articles manufactured in the State, when brought in competition with foreign articles will take precedence, other things being equal, and the foreign article be entitled to a second premium.

22. No vehicles or horsemen will be allowed entrance on the Fair grounds, except the private carriages or horses of members, through the private gate.

23. The Chief Marshal, with efficient aids, will be in attendance during the hours of exhibition to keep proper order.

24. No exhibitor will be permitted to enter more than one animal in each of the sub-classes.

25. Animals, when duly entered, are well provided for by the Society, without charge to the owner, and cannot be removed from the grounds, except by permission of the Executive Committee.

26. All machines, implements, or other products of mechanical art, must be exhibited by their respective makers, or inventors, or improvers, or their assignors, to or for whom only premiums for such articles will be awarded.

27. Every machine or implement offered for a premium, must be so designated or described as will serve to identify it to future purchasers, and also the selling price of the article must be stated and marked on the labels and in the published reports of premium articles.

28. Efficiency, cheapness and durability will be regarded as chief excellencies in every machine or implement.

29. The Chief Marshal will call the Judges at 10 o'clock on Tuesday morning—assemble them at his tent on the grounds—furnish them with the printed list of premiums, also with blank books in which to register their awards, and have the Judges conducted by the assistant marshals to their respective departments of the exhibition.

30. The Marshal and his aids shall give particular attention to the proper arrangement of all articles exhibited in their respective departments; point out the articles or animals to the Judges, and otherwise facilitate the examination by the Judges.

31. The track will be open for the trial of harness and saddle horses every day during the Fair.

32. A band of music will be in attendance each day, during the hours of exhibition.

33. An efficient police will take charge of the grounds during the night.

JUDGES TO AWARD PREMIUMS.

1. *Thoroughbred Horses*.—Col. Edmond Towns of Granville, Hon. Chas. Manly of Wake and James W. Patton of Buncombe.

2. *Quick Draught and Saddle Horses*.—Hiram R. Nixon of Wayne, Col. Jos. A. Whitaker of Franklin, and — Hyatt of Guilford.

3. *Heavy Draught Horses*.—John B. Leathers of Orange, Henry T. Clarke of Edgecombe, Charles G. Yates of Guilford.

4. *Jacks and Jennettes*.—Hon. Abram Rencher of Chatham, Jno. M. Moody of Northampton, Jno. L. Dancy of Edgecombe.

5. *Mules*.—Wm. Faison Sr. of Sampson, Jos. J. Jones of Warren, Ashley Saunders of Johnston.

6. *Short Horn and Durham Cattle*.—Jas. A. Williamson of Caswell, Col. Nich. M. Long of Halifax, Wm. K. Lane of Wayne.

7. *Deer*.—Henry T. Burgwin of Northampton, Henry Elliott of Cumberland, Rev. Josiah Crudup of Granville.

8. *Ayershires, Alderneys and Herefords*.—T. P. Devreux of Halifax, Col. Issac T. Avery of Burke, Col. Cad. Jones of Hillsboro'.

9. *Grades and Native Cattle*.—N. W. Woodfin of Buncombe, Owen Fennel of N. Hanover, Wm. Eaton Sr. of Warren.

10. *Imported Cattle*.—Dr. Wm. R. Holt of Davidson, Geo. W. Johnson of Caswell, Jno. A. Everitt of Onslow.

11. *Working Oxen*.—Richard K. Smith of Chatham, S. S. Royster of Granville, Jacob Mordecai of Wake.

12. *Fat Cattle*.—Hon. J. M. Morehead of Guilford, Eldridge Smith of Wake, Jacob H. Cooley of Franklin.

13. *Milk Cows*.—Hon. A. W. Venable of Granville, Seth Jones of Wake, T. C. D. McDowell of Bladen.

14. *Sheep—First Class*.—Paul C. Cameron of Orange, R. P. Taylor of Granville, Jas. E. Metts of Brunswick.

15. *Sheep—Second Class*.—Wm. J. Long of Caswell, H. B. Elliot of Randolph, Hugh McLean of Cumberland.

16. *Goats*.—Jno. O'Rourke of Wake, — Coppedge of Franklin, Riley Crawford of Wake.

17. *Swine—Large Breed*.—Rich. H. Smith of Halifax, Sylvester Smith of Wake, Col. L. W. Humphrey of Onslow.

18. *Swine—Small Breed*.—Hon. Kenneth Rayner of Hertford, J. C. Smith of Cumberland, Tho. C. McIlhenry of New Hanover.

19. *Swine—Natives*.—Wm. O. Green of Franklin, C. Wooten of Lenoir, Wright Edmondson of Edgecombe.

20. *Poultry*.—Nich. Arrington of Nash, Thos. J. Blacknal of Granville, Seth B. Jones of Chatham.

21. *Agricultural Productions*.—Patrick Edmondson of Halifax, Alorzo T. Mial of Wake, Jos. S. Holt of Alamance.

22. *Farm Products*.—Jas. A. Bullock of Granville, Josiah Collins of Tyrell, Samuel A. Spruill of Bertie.

23. *Dairy*.—T. P. Burgwin of Northampton, Ed. G. Reade of Person, Wm. Eaton Jr. of Warren.

24. *Food, Condiments, &c.*, from No. 14.—Daniel S. Hill of Franklin, Wm. Upchurch of Wake, Jno. W. Taylor of Chatham.

25. *Food, Condiments, &c.*, from No. 14 to 19.—Jno. W. Cunningham of Person, Chas. Skinner of Warren, Jos. B. Cherry of Bertie.

26. *Horticulture*.—Rev. Dr. R. S. Mason of Wake, Jno. W. Thomas of Davidson, Jno. F. Irwin of Mecklenburg.

27. *Fruit Trees*.—Owen Holmes of Sampson, R. R. Bridgers of Edgecombe, Daniel Christian of Montgomery.

28. *Vegetables*.—Gen. H. G. Spruill of Washington, David Carter of Hyde, Issac B. Kelly of Duplin.

29. *Mechanics—First Class*.—Jno. McMannen of Orange, Jno. D. Whitford of Craven, N. F. Nixon of New Hanover.

30. *Mechanics—Second Class*.—Jas. S. Leathers of

Orange, Thos. McGee of Person, Wm. S. Battle of Nash.

31. *Mechanics—Third Class*—Jos. H. Gooch of Granville, H. G. Bruce of Wake, Wm. Albright of Chatham.

32. *Saddlery &c*—Samuel P. Hill of Caswell, D. M. Barringer of Cabarrus, S. Wooten of Columbus.

33. *Cabinet Work*—Jas. S. Williams of Martin, Jno. Graham of Richmond, Wm. Murphy of Rowan.

34. *Shoes, Hats, &c.*—A. S. Brown of Rowan, D. A. Barnes of Northampton, J. H. Lindsey of Guilford.

35. *Sundries, to No. 12*—Jno. W. Norwood of Orange, Jno. W. Lewis of Caswell, David Hinton of Edgecombe.

36. *Sundries, No. 13 to 17*—Thos. H. Miller of Granville, Dr. Henry L. Plummer of Warren, Hon. D. S. Reid of Rockingham.

37. *Mill Fabrics*—Dr. Geo. Field of Warren, H. B. Williams of Mecklenburg, Dr. — Stanley of Craven.

38. *Household Manufactures*—E. J. Hale of Cumberland, Peyton A. Atkinson of Pitt, Robert Cathey of Haywood.

39. *Minerals, &c*—Spence McClanahan of Chatham, Jas. Sloan, of Guilford, Chas. F. Fisher of Rowan.

40. *Experiments and Essays*—Hon. W. A. Graham of Orange, Hon. David Outlaw of Bertie, Hon. G. E. Badger of Wake.

41. *Discretionary Premiums*—Walter L. Steele of Richmond, Jno. Devereux of Halifax, Jno. Winslow of Cumberland, Calvin Graves of Caswell.

E. A. CRUDUP, Ch'm. Ex. Com.

TO PREVENT INSECTS FROM INJURING PLANTS.—

We learn from a reliable source, that the following has long been tried with invariable success: Take a peck of hen *guano* and three or four handfuls of elder leaves, put them in a barrel together, in a corner of the garden, fill the barrel half full of water, stir thoroughly, and water the plants with the liquid once a day regularly, unless it is raining.—All depredating insects will disappear.

HEROIC BOY.

MR. WALTER RAMSAY, of this city, with his son WALTER, aged about 12 years, and Mr. John O'Rorke, went on a fishing excursion to Mr. Boylan's Mill on the 15th ultimo. While angling on a steep bank, Mr. Ramsay lost his foot hold, and fell into the pond, where the water was deep, and being unable to swim, was in danger of being drowned. Little WALTER, seeing his peril, instantly sprang into the water to his rescue, and seized him with the hope of bringing him out; but, though a good swimmer, he was too light to support his charge, and both the struggling father and heroic son would have been drowned, had not Mr. O'RORKE promptly come to their relief, and at the risk of his own life, plunged into the pond and saved them. While the friends of Mr. Ramsay rejoice in the result, and will remember with gratitude the kindness of his deliverer, all hearts will be filled with admiration at the touching heroism of the noble boy.

A number of well filled subscription lists have been sent to us during the past week, the result of the zealous and active exertions of our friends in different sections of the State. We are not only grateful for, but much gratified and encouraged by these substantial evidences of public favor. The largest list of subscribers to the Arator, procured by the voluntary efforts of any one individual, (forty, with the cash for subscriptions,) has been gotten up and forwarded by Mr. JESSE H. POWELL, of Edgecomb, which coming, as it does from the personal efforts of one of the most intelligent and successful farmers of that pioneer county, is held to be the highest compliment that could be paid to our paper, except one, and that is, the large and respectable list, (but few less in number,) procured, through the personal efforts among his neighbors, of the venerable and distinguished President of the State Agricultural Society. If the influential friends of improvement, in every county, would follow these examples, it would soon put us in possession of five thousand subscribers, and greatly increase our capacity to spread the information desired among our people.

Who will send us a Club of one hundred by or before the issue of our July number?

MARL IN FRANKLIN.

We had the pleasure of a conversation with Mr. ADOLPHUS G. JONES, of Franklin, a few days ago, from which we were gratified to learn, that he has discovered a shell marl bed on the bank of the Tar River, on his land, in the vicinity of Louisburg. He has tested the marl, and found it to be rich, but has made no examination yet as to the extent of the bed. We hope it may prove to be extensive, and that others may be found for the benefit of the farmers throughout the Tar River country.

ON THE HORSE.

The Southern Planter, an excellent paper published at Richmond, Virginia, is publishing a series of numbers on this animal, from the pen of FRANCIS RIVES. The Planter for April contains the 2nd part, which treats of the blood or race horses—the passion of England for them, the Queen having re-established the breeding stud at Hampton Court, and the royal yearlings at last sale averaged the enormous sum of 441 guineas, or \$2,657.99, a piece, estimating the value of the guinea at the old standard of \$4.66 $\frac{2}{3}$.—the average price throughout all England, in 1854, was \$652.81 $\frac{1}{2}$, and brood mares brought \$400 a piece. The thorough bred are generally considered too light, narrow, flat-sided, &c., for the hunter, charger, saddle, or coach, horse. The best system of breeding to remedy these deficiencies, is a cross between the Cleveland Bay and the thorough-bred: With these, Yorkshire furnishes all the crack cavalry regiments. The farm horses of England are much

larger than those of New York or Virginia. The Arabian is inferior to the English race-horse. The Morgan horses, though fair trotters, are considered decidedly too small for all purposes, and would in England, be called "clever cobs;" but they are heavy, and have a surprising aptitude for taking on fat. The Vermont Black Hawks, are symmetrical and graceful, but pronounced to be decidedly inferior in size to the blood horse, &c.

CHLOROFORM FOR ANIMALS.

Chloroform and ether have been administered with great success in shooting horses, removing tumors, and performing all kinds of surgical operations on animals. The mixture is one part of chloroform to four parts of ether, put in a bottle, and when used poured upon a sponge which is applied in a muzzle fastened to the head-stall, when the animal soon falls asleep and is easily operated upon. The mixture is safer than chloroform by itself, for man or beast.

NEW DISCOVERY IN BAKING.

Prof. Liebig has discovered that water saturated with lime, produces whiteness, softness and capacity to retain moisture in bread; removes acidity and supplies an element used in the structure of bones, which is deficient in wheat and more so in rye. He uses five pounds of water saturated with lime, to nineteen pounds of flour. Try it.

INDICATIONS OF A GOOD COW.—To the marks furnished by the veins and the escutcheons, says Mague, are to be added the following:—A homogeneous, very voluminous but yielding udder, sinking much by milking, covered with a thin skin and fine hair; a good constitution, an ample chest, regular appetite, and great inclination to drink; flesh rather lean than fat; a slender supple skin; soft, short hair; a small head, fine horns, quick eye, gentle look, feminine air, fine neck.

"*I Love to Steal.*"—An amusing incident occurred in one of our down-east churches some years ago. The clergyman gave out on a pleasant Sabbath afternoon in July—

"I love to steal awhile away
From every cumbering care,
And spend the hours of setting day
In humble, grateful prayer."

The regular chorister being absent the duty devolved upon the good old deacon M., who commenced—

"I love to steal——!"
and then backed down. Raising his voice to a still higher pitch, he sung—

"I love to steal——!"

but, as before, he concluded he had got the wrong pitch; so, deploring that he had not his "pitch tuner," determined to succeed, if he died in the attempt.

By this time all the old ladies were tittering behind their fans, while the faces of the young ones were all in a broad grin. At length, after a desperate cough, he made a final demonstration, and roared out—

"I love to steal——?"

This effort was too much. While every one but the godly and eccentric parson was laughing, he arose, and with the utmost coolness, said—

"Seeing our brother's propensities, let us pray!"

It's needless to say that few of that congregation heard the prayer.

Why are green peas like Sebastopol? Because they must be *shelled* before taken.

AN HIBERNIAN ANSWER.—"I say, Pat, isn't one man as good as another?" "Of course he is, and a grate deal better!"

CURE FOR CHOLERA MORBUS, &c.

The following, selected and handed to us by a friend, is doubtless good, as an auxiliary remedy, but our experience teaches that it is not safe to rely on it chiefly. It is harmless and may be given, in all cases, safely—in many, beneficially, along with any other medicines; but, if a physician be called in, not without consulting him.

CURE FOR CHOLERA MORBUS, DYSENTERY, &c.—There are a great many cases of cholera morbus, dysentery and similar diseases in this part of the country, and the cholera still lingers on the banks of the western waters, therefore we copy the following simple recipe from the Charleston (S. C.) Mercury, as worthy of confidence. It is always well to take such prescriptions under the direction of the family physician. The sweet gum tree is plenty in our State, and a large one of this species is growing by the side of the Lower Canton House, the proprietor of which informs us he has almost instantly cured a number of violent cases of dysentery, by making a tea of the leaves of the gum tree, which he says are equally as good as the bark.

Receipts for Cholera.—The worst cases of cholera morbus, dysentery, and flux, that ever I saw I have repeatedly cured in a few minutes, by a strong tea made of the bark of the Sweet Gum, taken green from the tree is best—steep a handful to a pint of water until the water is like good coffee.—Drink it clear, or sweeten it with loaf sugar, or add a wine glass of good brandy if the shock is severe. If not infallible, it is remarkable in its effects, and well worth being known and tried in every family.

SOLIN ROBINSON.

We can add our own testimony to the value of the Sweet Gum tea, having experienced amazing and speedy relief from its use in a violent case of

dysentery, which refused to yield to the usual remedies; we have also seen in the last five years, its wonderful benefit in many other cases; we have used decoction made from the bark both green and dried, and have discovered no material difference in the effect, both being efficacious.—*Franklin Farmer.*

I met with the foregoing valuable receipt several years since, and I have only to add, what has already been said by the "Franklin Farmer"—that I have witnessed speedy relief in violent cases of dysentery which refused to yield to the usual remedies, by the use of the Sweet Gum; having it at command, I have used the fresh or green bark, and I can with much confidence recommend its use from my own experience. A GEORGIA PLANTER.

MARKETS.

RALEIGH.—Corn, 1,00 @ 1,00; Bacon Hams, 12 @ 13; Hoground, 12 @ 12½; Flour, \$10 @ 11 per load; Meal \$1 @ \$1,10; Fodder, \$1 50 @ \$1 75; Oats, clean, 55 @ 60; Butter, 25; Lard, 11 @ 12½.

Flour is in demand, and would meet with ready sale.

FAYETTEVILLE.—Corn, \$1½ @ \$1 50; Bacon, 11 @ 12½; Cotton, 9½ @ 10; Flour 10½ @ 10¾.

WILMINGTON.—Bacon, 13; Cotton, 10 @ 10; Turpentine, yellow dip, \$2 95, Hard, \$1 75; Spirits, 39c.

PETERSBURG.—Bacon, western sides and shoulders, 8 @ 9½; Cotton, 8 @ 10; Corn, 1,00 @ 1,05; Flour, 11½ @ 14*; Tobacco, lugs, 4½ @ 6½; leaf, 6½ @ 12½; Wheat, \$2 00 @ \$2 50; Mexican Guano, \$35; Peruvian ditto, \$50.

NORFOLK.—Bacon, hams, 12 @ 13, hog round 11½ @ 11½; Cotton 10 @ 10; Flour, 11½ @ 12½; Spirits Turpentine, 42 @ 44.

* This quality Flour is manufactured at the city mills, and is considered a very superior quality of Family Flour, which accounts for its extra high price. The prices are regulated by the grades "midling," "fine," "superfine," "extra," and "family flour." It is a rare thing that any, except "city mill" flour, ever reaches the grade of best "family."

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of GENTS' FURNISHING ARTICLES. Our facilities for *buying cheap*, and having our goods *made up* under our own eye, makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2t

FARMER'S HALL,

RALEIGH, N. C.

The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored.



The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

no. 2—tf.

W. L. POMEROY,

PRINTER,

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF Theological, Law, Medical, Classical, Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

Office of the *Neuse Manufacturing Co.*,
RALEIGH, N. C. }

H. W. HUSTED, Pres't; E. B. FREEMAN, Treasurer.

THIS COMPANY will pay CASH for all Cotton and Linen RAGS delivered at their Paper Mills at MILBURNIE, six miles N. E. from Raleigh. The Planters of the country are urged to have the Rags, now wasting on their plantations, saved and sold. It will add much to the comforts of their slaves; and will cost but little care. ~~We~~ We want 700,000 lbs. per annum. 1-tf.

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN

Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.



THE

"ADAMS EXPRESS COMPANY."

MERCHANTS and others having Goodstoshop. will find it greatly to their advantage to consign them to the care of this Company. The well known responsibility of the Company is a sufficient guarantee against all losses. Having obtained unlimited privileges over all roads connecting this with the Northern Cities, patrons may rest assured of having their Goods transported at mail speed.

Notes, Bills, Drafts, etc., etc. collected, and remittances promptly made at all places where the Company has Agencies.

J. B. EZELL, Agent,
Raleigh.

Office FAYETTEVILLE ST.

1-tf.

New Arrivals! Spring & Summer Goods. For 1855.

T. R. FENNERESS hereby tenders his sincere acknowledgments for the very liberal support heretofore given him by his patrons and friends in the City of Raleigh & vicinity, and the citizens of the State generally, who have favoured him with a call, and hopes to merit & receive a continuance of those same favours, by prompt attention to the wants of those who may require his services. He may always be found at No. 15 Fayetteville Street, RALEIGH, N. C., where he is prepared to furnish any and every article of Gentlemen's wearing apparel, of a reasonable notice, made up in his own establishment, in the most approved style.

He respectfully calls the attention of all, to his stock of Spring & Summer Goods, which are just being received from N. York, and which are as fine and durable as can be bought in that place, and will be sold at such an advance on cost as will suit the times and enable all who wish to encourage home manufactures, and get really good clothing, an opportunity to do so, and not to be deceived by Northern ready made Clothing as they can purchase on as good terms and a more lasting articles, for the same money.

He has also a stock of READY MADE CLOTHING, which he is desirous of closing up, and will sell at a small advance above cost. Call if you want cheap Clothing.

Paris and American fashions. for Spring and Summer of '55 just received.

All persons indebted to the subscriber, will please call and settle by Cash or Note, as his last six months business falls due the first day of April, 1855, and the accounts bear interest from each term.

Register, Standard, and Spirit of the Age insert 4 times.

T. R. F.

A. T. S. M. YOUNG'S, No. 21, FAYETTEVILLE Street, may be found a choice lot of SPRING AND SUMMER GOODS for Ladies and Gentlemen's wear.

Also, prime Molasses, Rice, Sugars, Coffee, &c. All will be sold at low prices. Call and see.

Raleigh, March 26, 1855.

1-tf.

Star and Spirit of the Age copy.

Eureka! Eureka!—I Have Found It!

THE Subscriber begs leave to announce, that Having constructed an APARATUS WHICH MAGNIFIES A DAGUERRETYPE TO A FULL LIFE SIZE PORTRAIT, and reflects THE SAME UPON THE CANVASS, I am enabled to paint a PERFECT LIKENESS in about half the time it has heretofore required, and that, too, from only two or three short sittings. With this advantage, I can afford to paint PORTRAITS for a much less price than hitherto, and have accordingly reduced my charges to

\$25 for Life Size Portraits;

\$15 for Half Size;

\$10 for Small Heads.

With this assurance on my part, I flatter myself that a generous public will continue to bestow a liberal patronage.

Persons wishing Portraits from Daguerreotypes, have only to see my present mode of copying them, to be convinced that a perfect copy can be made.

The subscriber will visit the country, if desired to do so, for the purpose of painting families.

O. P. COPELAND.

Raleigh, March, 1855.

1-tf

JOB PRINTING.

The Editor of The Arator is prepared to execute Job and Book printing in handsome style, and will be thankful for that kind of patronage.

TABLE OF CONTENTS.

Address, Mr. Came-	Home, make it lovely,	73
ron's	Hops,	71
Animals, Improve-	Horses,	72
ment of,	How to Imp'v Worn-	
A thing every farmer	out Land,	79
should know	Indian Bread,	77
Anecdotes	Importing Food,	78
Beaufort the Termin-	Interesting to all	
us,	Classes,	80
Butter Making,	Insects, to prevent,	93
Clarendon Iron Works,	Lime and its uses,	74
Cranberry Pie,	Markets	93
Crops for particular	Manures,	73
Soils,	Money and Labor,	73
— variety of	Manure for Potatoes,	83
A good Cow,	Marl in Franklin,	93
Chinese Potatoe,	Mules,	73
Causes of Want,	Minute Padding,	77
Cure for chol. morbus	News Items,	85
Chloroform for animal	Number of Plants to	
Dear-Born's Scaffold,	acre,	75
Discovery in Baking	Posts and Stakes.	77
Employment for Fe-	Premium List,	86
males,	Rain,	85
Excel, if you can,	Reproach on F'm'rs,	71
Edgecombe Improve-	Rye,	70
ment,	Silk,	71
Fruit Trees and Vines,	Sheep Raising in N.C.	72
Gardens,	Sore Teats in Cows,	75
Ground-Pea Crop,	Seed to the Acre,	81
Gnaro,	Sweet Potato culture,	82
Gulleys and Plum	Subscriptions	93
Seed,	Tools and Seed, Best,	73
Heroic Boy,	Under-draining,	81
Hill Side Ditching,		65

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, JULY, 1855.

NO. IV.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, *in advance*, or \$1,50 if *not paid until the end of the year*.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more, at the same rates.

From the Recorder Supplement. HILL-SIDE DITCHING.

To AUGUSTUS HOWARD, Esq.

Dear Sir:—In my letter of the 15th June, I promised in my next to give some of the reasons why the system there described was better than any of the great variety practiced to prevent the washing of our fields; to answer a few of the prominent objections to the horizontal culture; and to show why none of the various systems that approximate to it, and intended to supersede it, and by their votaries thought to be equally good, if not better, will do.

Whether I shall be able to satisfy you and others before whom this communication will come that the system described will do what is claimed for it, the sequel only will prove. Certain I am that I shall not be able to shake the faith of the anti-improvement, knock down and drag out, kill and cripple advocates. They are so joined to their vandal policy, that it is quite as well to let them enjoy the (to them) sweet reflection, that when they are done with a piece of land it will do no one else any good—that posterity must do as they have done—take care of themselves.

To such I have not a word. On them argument is thrown away, and proofs demonstrable are not understood—not for want of capacity, but from a determination not to be convinced. Like carnivorous animals, they seem to have a natural propensity to destroy.

Before an impartial judge, I feel confident that the system will be sustained: and believing that I have one in the person of yourself, as well as many others, I will with confidence proceed to the task.

I lay down in the outset, the premises—that no system of culture can secure the land from washing, that does not prevent the water from embodying itself; and that any system that does, will protect it from any material injury.

To prove this position, you may take, or imagine to yourself, a field that is a perfect inclined plane, (and I intend the word *perfect* to have the benefit of its fullest signification,) and suppose the rain to fall on it until the earth is fully saturated—the balance must flow off as a matter of course. The plane being perfect, the water naturally flows directly down it, and will be equal at all points, forming a thin sheet all over the surface, no thicker at one place than another. Because of the perfectness of the plane and the water falling equally all over it, it will of course move off at all points at the same time; and for the same reason the relative positions of the different parts of the body will be preserved until it has all in succession passed over the lower edge of the plane.

A moment's reflection will satisfy you that none

of the plane is washed, because the moving sheet of water, equal at all parts of the field or plane, although perfectly inundated, is too light and thin to take with it any earth. The sheet of water, in its movement down the plane, is never increased in bulk or thickness, by overtaking other water, or meeting with it from lateral directions. It can only be increased by the falling rain; and it is reasonable to suppose that will be equal all over the field. Thus you perceive that the rain would have to fall fast enough to increase on the plane until there was sufficient weight in the sheet of moving water to take with it earth. And you further perceive, that if it washed at all, it would be equal at all points of the plane; because it is perfect—the sheet of water of equal weight and thickness, and moving with equal velocity at every point. It is admitted on all hands, that it is not the water that falls on land that washes it; but the collection of water from other parts passing over it in a current having weight and velocity. Notwithstanding the water that falls on the upper side of the plane has to pass across it, because of the perfectness of the plane, and the laws of gravitation, every part of the sheet is made to preserve its relative position, and can only be increased by the falling water; hence the sheet of water will be too thin ever to materially injure the land.

Now, sir, if I have made myself understood, the main point in the case is made out; and all that remains to be done is to apply it.

Perfectly horizontal rows, and perfectly parallel to each other, form a perfect inclined plane, no matter how many various directions they may take, or however serpentine they may be. The first, or guide furrow being level, suppose the land to fall one inch in five feet, and the next rows being run parallel to, and just five feet from the guide rows, would make an inclined plane of one inch in five feet, and just so with all the other parallel rows to that guide furrow. Thus the various guide furrows described in my communication of the 15th June, are the governing rows, to which the parallel rows are run—and when properly run, an inclined plane is formed, taking any one row with the row next above and next below. The necessary inclined or graded ditches having been made, the land bedded up on a level, and planted, or if you had rather, will you suppose the crop to have been ploughed over—and then, by way of testing your work, you have a heavy fall of rain, sufficient we will suppose, to overrun the water-furrows, or finishing furrow between your beds. We will now see the result. The rows being level, the water stands

in the water-furrows or middle between the rows equally from one end to the other; and when it can hold no more, it passes over the bed below from one end to the other; and just so with all the rows in the field, if the depth of the water furrow is about the same, and a good level is preserved.—The water-furrow will overflow as soon on the hill-top as on the hill side or in the valley; and although the same row may pass round the side of a hill, and through a valley, and over comparatively level land, it will overflow at all points at the same time; simply because the row is level, the water remaining where it falls until the water-furrow is full. The water-furrows becoming full at the same time, they all flow over simultaneously. Thus a sheet is formed, and takes its direction down the different planes, and is received by the ditches below and borne out of the field. Now, there would be no necessity for the ditches, if you could keep up your inclined plane perfect through the field, which you could do but for the various undulations of the land. These undulations compel you to have as many inclined planes as there are changes in the surface; and not unfrequently they face each other—or, in other words, incline towards each other, having a bottom between them, reaching from the base of one to the base of the other. Thus you perceive that the water of these two planes must meet, unless prevented by a ditch. I mean then to say by this system such an inclined plane is formed, so that before the water can become embodied, after overflowing the water-furrows, it is received by the ditches.

I tried the horizontal system for several years without the ditches, and with moderate rains my success was satisfactory: but when the rain was so great as to overflow my water-furrows, mischief was done to the land just in proportion to the extent of the rain. It is easy to perceive why I did not then succeed. The various inclined planes formed by the horizontal rows, over which the various sheets of water were moving by the overflowing of the water-furrows passed down their respective planes; and because of the various changes in the planes by the undulations of the land, the water was necessarily thrown into bodies, and a wash was inevitable. Properly graded and located ditches are a sovereign remedy, and since I have united them with the horizontal system, my success has been perfectly satisfactory.

Another reason: in all rains, whether great or small, that do not overflow the water-furrows, the

water is retained within the rows on which it falls: consequently the water is more equally distributed over the field than if it was permitted to run from the hills to the vallies.

Again—by the falling of rain the lighter and finer particles of the earth are taken up and float in the water, which is called sediment, all of which is retained to the land if the water is held by the water-furrows: and if the water-furrows overflow, even then much more is retained than by any other system; because as soon as the rain ceases, the overflowing water passes off by the aid of the ditches—the water-furrows retaining all that they can hold—the sediment contained in which is retained to the land.

Again—by this system, a less amount of rain will suffice to make a crop. In all moderate rains all the water is retained to the land, and just where it falls; consequently moisture is longer retained and more perfectly equalized than if the water had been permitted to run down the declivities to the bottoms, and in many cases out of the field.

Lastly—land will retain its fertility longer under this system than any other; and if reduced to poverty by the old kill and cripple system, can by this the sooner be restored and brought back to its maiden fertility—all other things being equal.—To establish this point one plain and obvious reason will suffice: When a piece of land is first reduced to cultivation, if a system should be established that will perfectly protect it from washing, whereby all offal from the crops would be retained to the land, it certainly cannot deteriorate as fast as if its soil was floated off by every heavy fall of rain. In the one case, its fertility is only reduced by giving up the necessary quantity of food for the growing crop; while in the other case the same thing is done, and the washing of the land besides, which in wet years like the present, amounts to much more than the necessary food for the crop. The same sort of reasoning will apply in reclaiming exhausted land. The manure applied, save what is consumed by the plant, is retained in the land, if washing is prevented; while, on the other hand, if the land is permitted to wash, by the end of the year the crop and the washing together will exhaust all the manure which may have been applied in the Spring.

More might be said, but I deem it unnecessary. If the arguments already submitted are not sufficient to establish the ground assumed, other arguments would be equally unavailing.

The next point before me is to answer or reply to a few of the most prominent objections to the

system, raised by men who admit its utility but excuse themselves from its practice for (to them) many weighty, good reasons. One very common objection is the number of short rows that necessarily occur in the horizontal cultivation—alleging that as much work cannot be done. To this objection I will remark, that on ordinary lying land there are as many so much increased in length over what they would be if run directly across the field, that they more than over balance the short rows. In other words. I doubt whether a horse has to turn as often in the horizontal culture as in the straight, save on very knobby land. But admit that they have, and even one-fourth more, what is that compared to the saving of the land?

Another objection: The ploughing cannot be as well done on those sharp turns that frequently occur on very knobby land. I admit the force of this objection; but contend that they seldom occur in ordinary lying farms. But even this should not deter us from trying to save our land, and supplying the deficiency by a little more hard work at those places. I however maintain that gradual curves can be ploughed as well as straight rows and quite as much in the day, and with more ease to the hand and horse, as they are all the time moving on a level.

But again, it is objected that this system requires the constant attention of the owner or manager to have it correctly done, and necessarily consumes much of his time at actual labor, in laying off the land. All of which I admit, without feeling or seeing the force of the objection. "If you want a thing done, send your servant; but if you want it well done, go yourself," is an old saying, and as true as it is ancient. My experience in life has been, that if I had any business well done, I had to superintend it in person. The objection, however, amounts to nothing; because it is the duty of the owner or manager to attend strictly in person to every branch of his business. Therefore, he should be there, whether the rows are to be run straight or crooked—to say nothing of the advantage that is to be derived. By way of encouragement to those who make a mountain of this objection, I will remark that several of my fields were laid off by a servant—I being present often enough to give him the starting points—and the work is as effectual as any on the farm. By way of over-balancing all the objections that have been or can be raised, I assert it will prevent hilly land from washing, and experience has proven the fact. If higher testimony is wanting, I invite any gentleman who desires it to give me a call, and he shall have a practical illus-

tration of the fact.

I now come to speak of the various systems that are intended to supersede the one I advocate and practice. And I might sum them all up together and dispose of them all with the same answer, as they are all liable to the same objection. It might, however, be considered too summary a notice, and not sufficiently respectful; therefore, I will name only a few and point out their defects.

Perhaps the most common practice is to run the rows on a level by the eye, or take the general advantage of the hill, making turn rows occasionally where the hill makes a material change. Now it certainly will not be considered necessary for me to enter into an argument to show that neither of these systems can prevent the water from embodying when there is a heavy fall of rain. A moment's reflection will teach all that a level row cannot be run by the eye; and if the row is not level, the water must necessarily be drawn to different points, a body will be formed, the ditch filled up with dirt, and the land washed. The other method spoken of, will in many cases bring out the water by the rows from both sides into the turning row, a current is then formed, a gully is the consequence, with the filling of the ditch below.—I speak advisedly, having traveled over the ground in my early efforts to prevent my land from washing. I therefore assert, without any fear of successful contradiction that neither of these methods will do.

Again: A more common practice, and very strongly advocated by many, is to run the rows with and parallel to the ditches. beginning below the ditch and finishing with short rows above the next ditch below. The reason urged for this system is, that each row will carry off its own water.—Well, this looks very well on paper; but why, allow me to ask, will you be at the trouble of cutting ditches? If your rows are to carry off their own water, you certainly have no use for them, save for the few short rows that would need an outlet for their water. I must be allowed to call in question the fact, and deny that the rows will bear off their own water, save a few of the first. If the fall of the land at all points of the field is the same, a number might do it ordinarily—not more than five or six. Suppose the land at one side of the field falls very abruptly, and at the other very slightly, and suppose the fall of the ditches is from the abrupt side to that which is gradual, you will readily perceive that the water will run the contrary way from the one you intended, in a very few rows from the ditch: because the grade is soon lost by

the land falling much faster at one side of the field than the other. But this is not all; the natural undulations of the land would soon destroy your grade, and cause the water to flow to the same row, when a current would be formed and the shortest direction would be taken down the hill, increasing in volume as it went, taking with it a sufficient quantity of earth to fill up the ditch below. For the sake of further illustration, we will admit that the rows may be so graded as to bear off their own water, without materially washing the rows, and then the system is objectionable; because the water would take with it all the sediment, and waste the water in hasty showers. This system has done, and is doing much mischief to land.

Again: Another method is to so grade the rows, that each one will empty its water into the ditch below. But this is subject to the same objection as running the rows parallel to the ditches. The common undulations of the land will be sure to embody the water; and besides this, another objection would be very prominent, provided the rows could be so run that each one could empty its water into the ditch, which is, that in hard rains the rows would carry a sufficient quantity of sand to fill up the ditches, unless they had the favorite fall of my very particular friend, of *six inches to every twelve feet*. Besides this, it would be liable to the objection of wasting light showers, and taking with the water the sediment or finer particles of the earth.

Once more, and I shall have done with those favorite systems; and although it is the last that I shall mention, it is not the less plausible. Nevertheless, you will find that its utility exists more in the imagination of the author than in reality.

But to the system. First, lay off the necessary inclined ditches; then run about three parallel rows on each side of each ditch; then lay off the balance of the land by a perfect level. The author and practitioner of this system claimed for it, that each parallel row would carry off its own water, and that you could cultivate the land better near the ditches, than if you crossed them with the rows. "All is not gold that glitters;" so with this theory, it will not bear the test of examination. It is subject to two objections. First, because in ploughing the horizontal rows—which would be bounded on each side by the parallel rows to the ditches, and would be what is technically called butting rows—you would have to turn round, making your outside parallel the butting row, and consequently a turning row to the horizontal rows, which would increase the turning at least fifty per cent—

already too great an objection with some. The second objection is, that there is necessity for the ditches—for the reason that where the rain is so great as to overflow the water furrows where the land is laid off on a level the sheet of water in its downward passage will first reach the rows parallel to the ditch, when the sheet will be broken—the parallel rows having the same fall as the ditch, the water naturally will take down them, and never will reach the ditch, unless the rain was one of the largest kind. I deny, too, that the land can be cultivated better and more economically near the ditch; because the parallel rows must be at least one half of their width from the ditch, while those that cross the ditch can be cultivated plumb to the ditch, pains being taken.

I have now, sir, complied with my promise to you of the 15th June, and respectfully submit the defence for your decision, as well as the system there described, hoping you will give it a critical investigation, and expose its defects, if you find them to exist.

I am undertermined as to which class of your interrogatories I will answer in my next or September letter; but will conclude in all good time for you to hear from me again in that mouth.

With high regard,

Your most obedient ser't.

R. H. HARDWICK.

JOCASSIE, Hancock Co., Ga., }
July 15, 1847. }

Important to Farmers.—We are informed by Mr. Chamberlin, of the City Mill, that the farmers of Vermont are in the habit of heading the movements of weevil by a very simple process. The next season after it makes its appearance they go through their wheat fields, about the time the wheat is heading, immediately after a shower or while the dew is on it, and scatter newly slacked lime broad cast, so that it will adhere to the heads and stems of the grain. They use about a bushel to the acre.

Good lime should be secured, and slacked by sprinkling a little water over it so as to retain all its strength. A paddle may be used in scattering it. The remedy has, it is said, been so effectually tried, as to leave no doubt of the result.

Strips in large wheat fields left untouched by the lime, for experiment have been entirely destroyed by the weevil, while the grain on each side was all saved.

Since this intelligence was received, Mr. Jesse Allen, of the Centre Mill, has received corroborating information from a Muskingum country farmer,

who had seen the same practiced and the same results there.—*Akron (Ohio) Beacon.*

SEEDING WHEAT FIELDS TO CLOVER.

Spring (says the Real Estate Register) is undoubtedly the best time for seeding wheat fields to clover, and is that generally employed. Many fields are already sown, though the backward spring has doubtless delayed others. The use of a light harrow after sowing is the best security for the vegetation of seed and the permanence of the young plants, and will not injure the wheat in the least, but is generally thought very beneficial to that crop. The growth of the clover is increased, and its "bathing" in a measure ensured, by a top-dressing of from one to three bushels of plaster per acre, in May. No one who has observed the essential difference in plastered and unplastered clover will neglect its application. Clover takes less from the soil and more from the atmosphere, in proportion to the feeding and manuring value of its product than most other plants. This is one source of its value—its numerous roots, long stalks, and abundant leaves, apply much vegetable matter to the soil. A luxuriant growth of clover is an excellent preparation for any and every crop. The soil is loosened and deepened by its far spreading roots, which bring to their support and to the surface the valuable salts in the subsoil not usually pressed into service. This, too, is the reason why clover so delights in a deep fresh soil, and why after subsoil plowing such abundant crops are sure to follow.

THE VALUE OF A GARDEN.

But I hold that any farmer, who is worthy of the name, will prepare a small plot of ground for wife and daughters, and that he will, out of love to them, make it all they can wish or desire. It is these little things that make home pleasant and happy; and it has been the lack of these that has driven many a loving heart out into the world and away from a sterile, barren home. Give the wife and daughters a place to plant, tend, and rear their bower; help them, if needs be although it may take an hour sometimes that it is hard to spare, and you will a thousand times bless God for so ordering your mind that you did it. What husband or father, rugged though his nature may be, does not fondly linger around a home made so bright and cheerful by the fairy hands of his wife or daughters, scattering, as it were, in his way, the beauties of their little plot?

What son or brother ever forgets his home who has found his room daily perfumed with the flow-

ers which have been raised by the hand of a fond mother or gentle loving sisters, and placed there through the promptings of their own dear affectionate heart? What daughter ever forgets the home where she has cultivated her little garden, and year after year been so happy in the blossoms which have been borne upon the plants she has watered and tended with such patient care? Parents, brothers, sisters, the dear old home, all—all come back to her, though years may have passed away, in the scent or bloom of every flower. The family is seldom unhappy, whose dwelling is surrounded with shade trees, and whose garden is gay with cultivated plants. Do not, then, I beseech you, forget the little flower garden.—*Mr. Peters's Address.*

PEA WEEVILS.

Few persons (says Dr. Harris,) while indulging in early green peas, are aware how many of these insects they swallow. When these pods are examined, small discolored spots may be seen within each corresponding with a similar spot on the opposite pea. If this spot on the pea be opened, a minute whitish grub, without feet, will be found therein. It is the weevil in its *larva* form lives upon the marrow of the pea, and arrives at its full size by the time the pea is dry. The *larva* then bores a round hole, from the hollow in the centre of the pea, quite to the hull, but leaves the germ of the future sprout untouched. This insect is limited to a certain period for depositing its eggs. Late sown peas escape its attacks. Those sown after the 10th of June are generally safe.

DRILLING IN CORN.—The editor of the *Ohio Farmer*, is in favor of the drilling system for corn.—He says, "The drill system gives to every stock of corn an equal chance for growth; by it, the roots have one by two feet diameter, whereas in hill culture, they are more confined having each stalk only about 4 by 18 inches diameter for support.—Western prairie fields where drill culture is practiced, we are told, realized one-eighth to one-tenth more per acre than when the hill culture is pursued.

THE KITCHEN GARDEN.

The size of a garden, where the ground can be at all spared, should never be less than half an acre, and a full acre where it is convenient to appropriate that amount. This would be ample to raise all the desirable vegetables and fruits, except apples, for a large family. It would afford sufficient grass plots, and room for a few ornamental trees, standard and dwarf pear trees, cherry, plum, and quince trees; raspberry, blackberry, strawberry, gooseberry, and currant beds, grape

vinces, &c. A *hot bed* or two, which can be constructed very simply, should be connected with every garden, especially in the country, distant from public establishments, in order to raise cabbage, egg, and tomato plants, for transplantation, and in which to start melons, Lima beans, &c., for early crops. A flower that is raised and cultivated by yourself, diffuses greater incense & possesses many additional charms, than those obtained in the market for money.

A taste for gardening and flowers, must frequently be acquired by males; but it is as natural to the ladies as it is for the sparks to fly upwards; or to speak of it more secularly, as it is for them to see charms in the last new bonnet.—*Real Estate Reg.*

SUGAR A CHEAP ARTICLE OF FOOD.

The only cheap article of food is sugar, and that can be bought for a less price per pound than flour. It should be more largely consumed as a matter of economy. Let the people eat more sugar, rice, tapioca, farina, maccaronia, hominy, dried fruits, and less meat, and much less crude vegetables.

BOILING POTATOES.

Not one housekeeper out of ten knows how to boil potatoes properly. Here is an Irish method, one of the best we know. Clean wash the potatoes and leave the skin on, then bring the water to a boil and throw them in. As soon as boiled soft enough for a fork to be easily thrust through them, dash some cold water into the pot, let the potatoes remain two minutes, and then pour off the water. This done, half remove the pot lid, and let the potatoes remain over a slow fire till the steam is evaporated, then peel and set them on the table in an *open* dish. Potatoes of a good kind thus cooked, will always be sweet, dry and mealy. A covered dish is bad for potatoes, as it keeps the steam in, and makes them soft and watery.—*American Agriculturist.*

STEAM PLOWING.

Mr. Williams, of Baden, England, says:

When I first conceived the idea of putting my portable engine to such a purpose, after a great deal of consideration I came to the conclusion that if steam-plowing could be accomplished, it ought to be done by the simple 4, 5, or 6 horse-power engines which are generally used for farm purposes. I likewise discovered that such an engine would be quite sufficient to propel from three to six plows at a time, according to the nature of the soil, inasmuch as my engine (one of five horse

power), which drove a strap nearly at the rate of 20 miles per hour, by reducing the speed to about two miles per hour would increase her power exactly in the same ratio as the speed was diminished. The advantages appeared to me to be so great, that I immediately set about constructing a machine, to be driven by the engine, which will plow a twenty-yard land without moving, and draw the plows in furrow backwards, as well as to her, by means of a pulley fixed in a frame at the other end of the field. It will not be a difficult task to prove to all practical men, that if steam-plowing is brought about, it should be done by the same engine that does the other work of the farm; and as a six-horse engine is the outside power that is generally required for that work, so it will be quite sufficient for all field purposes. I am certain that with a six-horse power engine driving a machine I am now about to make, considerably lighter than the one I have tried, I shall be able to draw at the rate of two miles an hour, from four to six plows at once at the ordinary depth which is plowed in the west of England, to plow both to and from the engine, draw out the spare rope; plow from 10 to 20 yards in width without moving the engine; and when required to move, the engine shall propel both herself and the machine on the next land.

SOWING PEAS AS A PREPARATION FOR WHEAT.

As it is not yet too late to try the experiment the present year, we copy the following important and interesting article on the subject of sowing peas as a preparation for wheat, from the Southern Planter. The experiment was made near Richmond, Virginia, on just such land as may be found by thousands of acres in North Carolina, and indicates a cheap and easy method of increasing our crops of wheat and corn by turning under a green crop of peas, but proving, what we have long believed, that a shift from wheat to corn every other year, is best. It appears that after the first crop of peas, wheat followed wheat, and yielded only twelve and a half bushels to the acre; and that after a corn crop that immediately succeeded it, wheat was again sowed and made sixteen bushels to the acre. The Planter doubts whether this mode of cropping can be judiciously applied to all lands, especially such as are already saturated with vegetable matter. If any of our readers have experience on the subject, we shall be greatly obliged to them for statements of the same for the next number of the Arator.

The Planter says:

"A subscriber wrote to us a few days ago as to the propriety of seeding peas upon the stubble of

this year's wheat crop with a view to seeding wheat upon the same land this fall on the pea fallow.

"As a public answer will be of service, we will state here what we saw a few days ago.

"The fine farm of Pichonochee, on the Chickahominy, five miles from Richmond, must have been observed for several years by every one who has passed through it on the Central Rail Road. And not the least noteworthy feature is the field which lies broad side of the Rail Road, between it and the swamp, with a crop of wheat, now the third in succession, that, but for the drought, would have made some twenty five bushels to the acre. We paid a visit to the worthy proprietor, Mr. Matthews, to get the history of that field, and now give it from notes made on the spot:

"Mr. Mathews purchased the land in the year 1849 and seeded this particular field in wheat in the fall of that year. Its crop was not measured separately, but it did not exceed seven bushels per acre as a maximum. In the month of July, before the shocks of wheat were hauled out of the field, peas were sowed on this field, at the rate of one bushel per acre, broadcast on the stubble, ploughed in with a one horse plough followed by a harrow, (or drag, or rake, as we are sorry to see it improperly called in some places.) The peas were ploughed under from the 20th September out, and wheat sowed upon the land. The product was twelve and a half bushels of good wheat per acre.

"In 1852 the land was planted in corn and made six barrels per acre, and was again sowed in wheat. In 1853 the wheat yield sixteen bushels per acre, and was followed by peas and wheat as before. In 1854 the crop of wheat was twenty three bushels per acre, and was again followed by peas and wheat. In 1855 the wheat is cut short by the drought, but from what we saw we think it safe to estimate that in a fair season it would have made twenty five bushels per acre.

"The land Mr. Mathews called stiff, but we who have STIFF land thought it a light soil,—clay with a fair admixture of sand. It had been previously owned by the Messrs. Haxall, and had never been limed by them. Nor has Mr. Mathews applied to it any other manure than what the peas themselves have furnished.

"But whether with or without lime, it is remarkable that six successive crops should have been removed from the land not only without any diminution of fertility, but with a rapidly progressive improvement.

"Whether this mode of cropping can be judiciously applied to all lands, we cannot say. We know from our own experiments, at Shadwell, and from the report of Mr. Noland's experiments at Rex, that is would not suit the south west moun-

tain lands or the dry creek lands, generally thought the best of that region in Albemarle, and we doubt whether it would be proper in any lands that are already saturated with vegetable matter. Nor can we venture an opinion as to the time at which this rotation will cease to improve the land or the crop. But we are inclined to the belief that it will only produce more speedily that exhaustion in the product of wheat which we have been laughed at for maintaining as a consequence of the repeated succession of the clover crop.

"We prefer now not to encumber the statement of what appears to us as a very remarkable fact with any theory as to the operation of peas as a fertilizer, or the duration of the fertility they produce.

"There are not facts enough known, or if known, they are perhaps not yet so systematized as to authorize anything of the kind. But if a few of our friends choose, they can, in a few years, by proper experiments, throw a great deal of light on this subject; and it is very evident that such experiments can be conducted for six or eight years without the loss of a cent, either in time or trouble.

"In looking at the statement of Mr. Matthews' course of cropping it will strike the reader as singular that whereas after the first crop of peas, twelve and a half bushels only of wheat was made, after the corn crop which followed that wheat, sixteen bushels was made."

GREEN CORN FOR SOILING AND FOR HAY.

It has always been a favorite idea with us, the sowing of corn for soiling and for hay; and though we have tried it several times, and have always been disappointed on account of the difficulty of curing the fodder, we have never despaired. Now that we are on a farm where the absence of cross fences, the scantiness of the herbage, and the danger of depasturing up-country cattle, make it expedient and safe to keep stock confined during the summer, we mean to try it again.

But to avoid blunders as far as possible, we wrote to Mr. Lewis Bailey of Fairfax for his experience with corn; and having received it, we shall now communicate it to the public. Mr. Bailey is known to some of our subscribers by the fine beasts he has exhibited at both of our State Fairs where he has taken premiums on an essay on dairy management, on ploughing with oxen, and on his stock of various ages and different sexes. Better stock of the kind—and they are our favorites, the Devons—have not graced the show grounds.

"I have been sixteen years in Virginia," says Mr. Bailey, "and commenced seeding corn for summer feed the first year I came. I have never missed doing it but one summer, and then I learnt

its value by being without it, more than I did any year that I had a plenty of it.

"I have sowed the early northern eight-rowed corn two seasons, and found it was no earlier, and that it produced but little more than half as much as the Virginia corn sowed at the same time.—When the northern corn was large enough to cut or in blossom, the Virginia corn was not so forward and better feed.

"I have often sowed in drills, and though the labour of tillage is greater, I have never found any resulting advantage in product. On a farm of about one hundred acres of grazing, plain and meadow land, I have usually sowed from fifteen to twenty-eight bushels of corn for summer and winter feed.

"The ground for this crop should be ploughed in the fall or early winter for an early spring crop, and well manured at that time if stable manure is to be used; and the ploughing may be deferred for the summer crops until the spring and summer. In all cases, if the land is not rich make it so. For the first crop sow about the middle of April, or a few days earlier or later, according to the season, but at all events as early as possible. For the next crop sow again in about twelve or fifteen days. Let the interval between that and the next crop be still longer, and increase it for each successive sowing, as the season becomes more and more favourable to the rapid growth of the corn.

"The ground having been got into good order, I harrow in the corn, and if after four or five days I find much of it uncovered, the boys go over it with sticks about an inch diameter and three feet long, and mash down the grains that are not covered. But on clover sod, or other fresh ploughed land, after spreading the manure as evenly as possible over the surface, I sow it with plaster, then sow the corn and turn all under with a light two-horse plough, ploughing only deep enough to give a good covering. I follow the first plough with Ruggles, Nourse & Mason's subsoil plough. The first plough, with a sharp point and share, is worked with one horse, and runs about three inches deep; the subsoil plough, a light one, is worked as deep as the horses can pull it to advantage.—Both have the gauge wheel attached.

"I sow from three to four bushels per acre.—For four horses and fifteen milch cows I have used about two acres per month. My cows are fed morning and night in the stables, and run in a short pasture during the day. My horses are fed in the stable all the time. The first and second

will not yield as much per acre as later sowings, because the season is not so well adapted to the growth of corn.

"I begin to feed it as soon as the tassel appears, cutting after the dew is off in the morning, and hailing in the evening. But when the corn gets its full growth, cut and feed at your convenience.

"I have found much difficulty in making hay of it. That which is intended for early winter fodder I cut and stand up in the field, never laying it on the ground. I make medium sized shocks, using two bands, either of straw or fodder, (straw is best,) to secure it, and tie one quite near the top, the other as low as convenient. What I wish for later feed I cut and lay in swathes, like wheat left by the cradle, only spread more over the ground.—It is left there to wilt for three or four days, then taken up, if free from rain-water, and laid on a top stack, or as we term it, fodder house, with both ends open. It is put on the frame, just as tops are from two to two and a half feet thick, securing the top with the corn, straw, or coarse grass to keep out the rain. If the corn lodges or blows down, and does not rise again, you will be obliged to lay it on a top stack frame, as it will not save well in the shock. On no account bind it in sheaves, as the rain gets under the bands, and will produce rot.

"I estimate the yield to average from seven to eight tons of dry winter food per acre."

Here, then, according to the statement of a man with fifteen years experience, in Virginia, is a certain resource for abundant grass and hay in one and the same plant, and here is a quality which gives our noble and beautiful maize an additional claim to rank first among the cereals in this country. It is the only plant we know of which gives bread, grass and hay in one.

We know that repeated failures have discouraged the many persons who have tried it, but we hope they will not yet despair. We know that intelligent persons, who will admit the snitableness of this product for cows and hogs, will yet discredit the practicability of using it as a food for horses that are hard at work, but, in refutation of the arguments they can adduce, we beg to remind them that Mr. Edmund Ruffin, among his memoranda as commissioner, states the fact that the Cuban horses of all sort seat nothing else. The same fact was stated to us a good many years ago by our friend N. P. Trist, Esq., sometime consul at Havana, who informed us that the diminutive but hardy and vigorous horses of the island, (they use stallions there entirely,) fed on nothing else, will go on the gallop, the

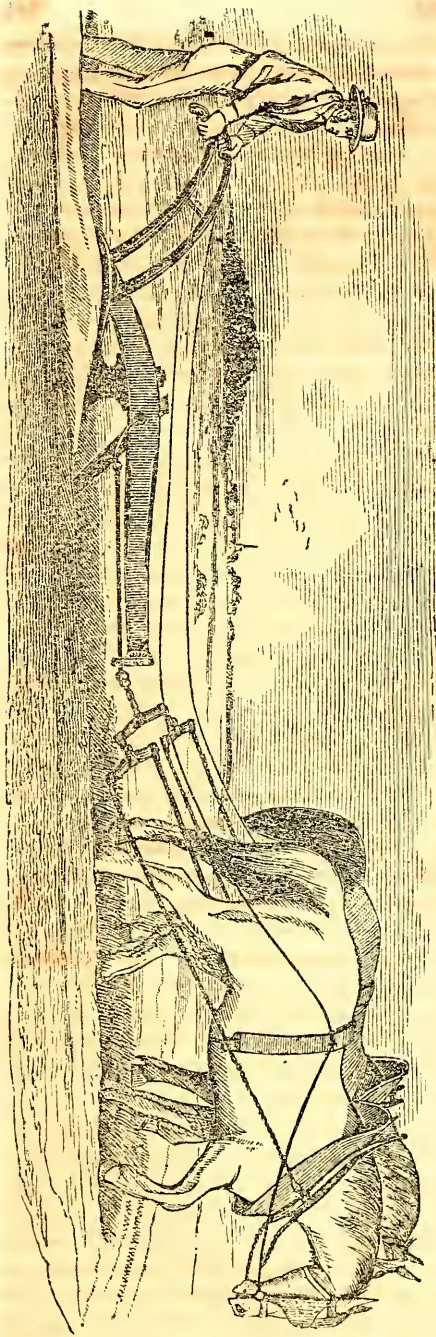
common gait, sixty miles of a day, with a heavy rider. The splendid mules they have, too, for their volantes, or huge gigs, eat no other food, though they are all Kentucky raised and accustomed to corn in the ear. We have ourselves done some of the hardest fallowing on green clover for rack food, and never hurt a horse by it. Indeed, for ten years, when we practised soiling habitually, or pasturing the horses on good grass or clover all night through the late spring and the whole summer, we lost only one per cent. of our team, or one horse in ten years out of an annual team of ten horses. We know farmers who make their corn, and summer-fallow pretty tight land, with scarcely a grain of corn, by following Mr. Gilmer's plan of spelling their horses alternately.

It is true that a horse with his belly-full of green food must be treated in a somewhat different manner from one who has only a moderate portion of highly stimulating food, or colic or broken wind will be the consequence; but it is only necessary to give it to him heavily at night and more sparingly at mid-day, when he requires any how most generally more rest than victuals.

We shall return to this subject at another time, and treat it more elaborately. It has a very important bearing on the rural economy of the whole South. For the present we have written enough.—But not too much, if the advice we give is followed, and our subscribers decide, not to try an experiment, but to follow the simple rules of Mr. Bailey. We feel confident that an observance of them, a patient and intelligent observance, will save thousands of dollars to the community. It is not too late to begin this year, for the most that anyone will have lost by our delay in this article will be only the first sowing, or one month's feed.—*Southern Planter.*

THE RAINING TREE.—The island of Fierro is one of the most considerable of the Canaries, and I conceive the name to be given it upon this account—that, its soil not affording so much as a drop of fresh water, seems to be iron, and indeed there is in this island neither river or rivulet, nor well nor spring, save that only toward the seaside there are some wells, but they lie at such a distance from the city that the inhabitants can make no use of them thereof. But the great Preserver and sustainer of all, remedies this inconvenience by a way so extraordinary, that man will be forced to sit down and acknowledge that he gives in this an undeniable demonstration of his wonderful goodness. For in the midst, there is a tree which is the only one of the kind, inasmuch as it has no resemblance to any of those known in Europe. The leaves of it are long and narrow, and continue in constant verdure, winter and summer, and its branches are covered with a cloud, which is never dispelled, but resolving into a moisture, causes to fall from its leaves a very clear water that in such abundance that the cisterns which are placed at the foot of the tree to receive it are never empty, but contain enough to supply both man and beast.

Let every man adopt a plan, and carry it out as best he can.



PLOWS AND PLOWING.

As good plowing is a paramount consideration, in field cultivation, we shall endeavor to learn, and keep our readers advised, what are the best and most improved implements, in use, for that kind of work. We begin with selections from the large and valuable collection of plows manufactured by Messrs. Ruggles, Nourse, Mason & Co., of Bos-

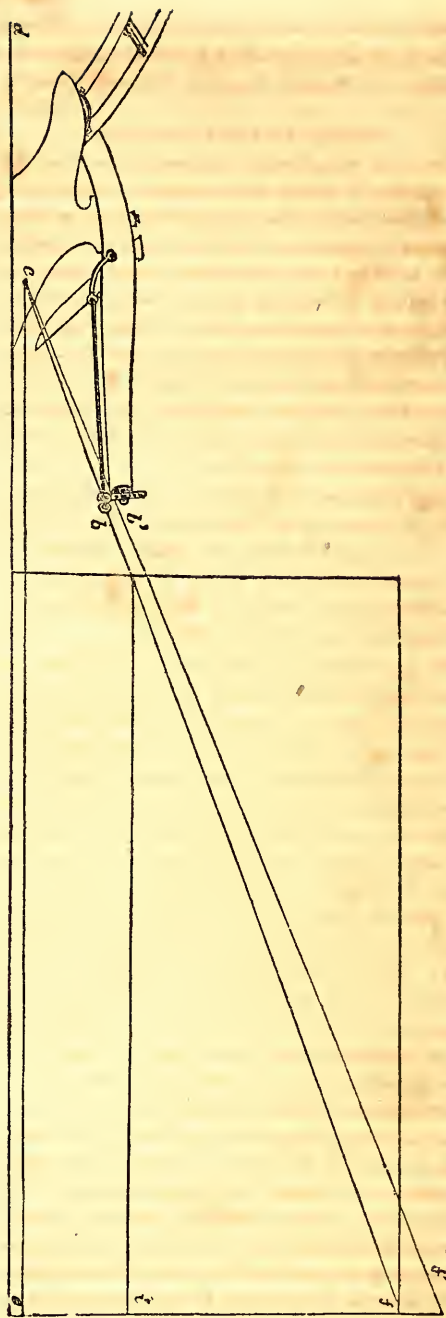


Fig. 31.

ton, Massachusetts. We shall accompany our notices, with a handsome cut to each, more for illustration than ornament—usefulness being our chief object. We present first, above a skeleton plow and a noble plow and team, with a sturdy arator at the handles breaking up the land, and the following remarks on plowing, illustrating the true operation of the draft and the proper manner

of its application, for which we are indebted to the Catalogue of Messrs. Ruggles, Nourse, Mason & Co.

REMARKS ON PLOWING.

From the complicated structure of the plow, and the manner in which circumstances oblige us to apply the draft to the implement, some misconceptions have arisen as to the true operation of the draft, and the proper manner of its application.—Too little is understood of the true principles of draft, to enable the plowman to attach his team and arrange the clevis so that the plow will do its work properly, and with the least force or power. To render this subject intelligible to every mind, the following remarks are made in connexion with the plate annexed, Figure 31.

Let *b* represent the forward end of the beam, and *c* the centre of resistance on the plow, which may be assumed at two inches above the plane of the base of the plow, *d e*, though it is liable to constant changes, from the depth of the furrows, and constant inequalities in the soil.

We have first to consider the particular form of those parts through which the motive power is brought to bear upon the plow. It is evident that the motive force acts in a direct line from the hook or ring at the shoulder of the animal, to the centre of resistance, and were it not for considerations of convenience, a straight beam lying in the direction *c b*, and attached firmly to the body at *c*, would answer all the purposes of draft perhaps better than the present beam. But the draft not being the end in view, but merely the means by which the end is accomplished, the former is made to subserve the latter; and as the beam, if placed in the direct line *c* to *b*, would obstruct the proper working of the plow, we are constrained to resort to an indirect action to arrive at the desired effect. This indirect action is accomplished through the medium of an angular frame-work, consisting of the beam and the body of the plow, so strongly connected together as to form an unyielding structure. The effect of the motive force applied to the frame-work at the point *b*, and in the line of *b* to *f*, produces the same results as if *c b* were firmly connected by a bar in the position of the line *c* to *b*, or as if that bar alone were employed.

The average length of the trace chains being 10 feet, including all that intervenes between the clevis and the plow at *b*, and the horse's shoulders, let that distance be set off in the direction *b* to *f*; and the average height at the horse's shoulders where the chains are attached, being about 4 feet 2 inches, let the point *f* be fixed at that height a-

bove the base-line *d e*. Draw the line from *f* to *c*, which is the direction of the line of draft acting upon the assumed centre of resistance, *c*; and if the plow is in proper trim it will coincide also with the ring of the clevis; *e c f* being the angle of draft, and equal to 20° . It will be readily perceived, that with the same length of hames, the angle *e c f* is invariable; and if the plow has a tendency to rise at the heel, or run on the point, under this arrangement, it indicates that the ring at *b* is too *high* in the clevis. Shifting the ring one or more holes downward, will bring the plow to work evenly upon the base of the landside, or work flat.

If the plow has a tendency to rise at the point of the share, the ring *b* is too *low*, and must be moved by raising it one or more holes in the clevis. If a pair of taller horses be harnessed to the plow, the draft chains, depth of furrow, and soil (and, by consequence, the point of resistance *c*.) remaining the same, we should have the point *f* raised, suppose to *f'*; by drawing the line *f'* to *c*, we have *e c f'* as the angle of draft, which will now be 22° , and the ring will be found to be *below* the line of draft, which is shown at *f' c*; and if the draft chains were applied at *b*, in the direction *f' b*, the plow would have a tendency to rise at the point of the share, by the action of that law of forces which obliges the line of draft to coincide with the line which passes through or to the centre of resistance; hence the ring *b* would be found to rise to *b'*, which would raise the point of the share out of its proper direction. To rectify this, the ring must be raised in the clevis by a space equalling that between *b* and *b'*, causing it to coincide with the true line of draft, which would again bring the plow to work evenly on the base of the landside, and run flat.

The foregoing principles are substantially such as are adopted by the most experienced plowmen, and, if properly applied, will not only do the best work, but accomplish it with the greatest ease to themselves and their team. If the power (or team) is not rightly applied, good work cannot easily be done; for if the plow inclines in or out of the ground too much, or takes too wide or too narrow a furrow-slice, the plowman must exert force to direct it properly, in addition to that required to overcome the obstacles and inequalities in the soil, but if the power be rightly applied, the plow will move so accurately as not only to perform good work with more ease to both plowman and team, but in soils free from obstruction, even without being guided.

To effect a proper horizontal movement, the clevis at *b* or draft-rod (if one is used instead of a clevis) must be adjusted and confined at that point, moving it to the right or left, if necessary. This will cause the plow to take the proper width of furrow slice, which, in sod, should be wider or narrower according to the depth of furrow, or rather the thickness of the furrow slice required; for as the thickness is increased, so also must be the width, in order to turn it easily and perfectly over, particularly when the furrow slices are required to be laid over level and side by side. The proportion in ordinary sod should be 6 by 11, 7 by 12, or 8 by 14 inches. In determining the width of furrow slice, some regard must be had to the strength of the particular sod to be turned, for the plow will turn over a wider slice in a strong or stiff sod, than when running in one more easily broken, or it will cripple and double when raised to a perpendicular position, thus only doing the work called "cut and cover." When the slices are required to be laid at an angle, and lapped each one upon the preceding, the proportion of width should be less, or about 6 by 9 and 10 or 7 by 10 and 11 inches; for the narrower the slice in proportion to the depth, the greater will be the inclination of the slice as it is lapped upon the preceding one.

THE POULTRY YARD.

On the principle that prevention is better than cure (and generally not only better, but much easier,) this is the best time to wage war against those pests of the poultry-yard of the insect tribe, which, if allowed to get the upper hand, will interfere with all its arrangements, disturb the sitters on their nests, make fidgety bad mothers of hens which would otherwise prove good ones, and finally occasion even the death of many chickens.—Choose the earliest warm, sunny day, to thoroughly cleanse and line-wash the hen-house. Let only one be done each day; as it should be done quite early, to allow plenty of time for it to get dry. Wash, clean, and if necessary, repair the floors.—If it is not thought desirable to go to the expense of new gravelling, the runs, those which have been firmly laid down in the first place, may have the surface pared and removed, which will leave it clean and pure. Especial care must be taken to keep the nests well washed and cleaned, and if the dust baths are supplied with fresh dust—wood ashes if they are to be had—the fowls will clean their feathers and save much trouble and disappointment later in the season, for there are few things more injurious to poultry than being infested with vermin. When the hen-houses are set

to rights, the rats should be looked to, caught if possible, and their holes stopped to prevent their depredations among chickens and ducklings.

It is best to get through the business of setting the hens as soon as practicable; it should not be delayed beyond this month and the next; late chickens generally prove very unsatisfactory, but some of the finest we have known have been hatched in April and even in May.

When the hen hatches, leave her pretty much to herself; interference vexes her, and seldom does good. When the hatching has gone on sometime, if the hen gets fidgety upon the eggs which are ascertained to be good, from care of the chicks they may be taken from her, fed and kept warm; but unless she slights the eggs, it is best to leave her her chickens. Place a cup of crushed barley, with a little round oatmeal, in the corner of the nest, and some water in a shallow pan, and she will know when to invite her young ones to their first repast. When the hatching is over, and the chickens dry and brisk, they may be removed into a new and clean nest, warmed, to avoid the insects which may possibly infest the sitting nest. When the chickens run about the nest, the hen may be put down under a coop, and the little ones fed on a good change of food; hard-boiled egg and bread crumbs, crushed barley, pearl barley boiled, barley-meal, and other things which have been recommended by good judges. We do not like either groats or rice, nor have we found any advantage in the use of oatmeal worth its additional cost. It is best to put the hen in a wooden coop, which will shelter her and her chickens in case of a shower, and on wet days keep them in altogether.

Ducklings must be kept from the water, and from getting wet. If a jar is given them to drink out of, with straight sides, they will drink and wash their breasts, but cannot get wet to injure themselves. The old duck may have a pan or tub with high, straight sides, so that the ducklings cannot get into it, which can be given to her once or twice a day, and then taken away. This care to have the ducklings kept dry, penning the duck on a dry spot, and having her constantly supplied with her limited quantum of water, has been found very successful in rearing ducks without any deaths. They will eat almost incessantly, and grow very fast. It is necessary to feed them very often, as they are greedy, dirty little fellows, and leave what they do leave, very dirty. They will eat barley-meal porridge, crushed barley, and after a few days, oats.

SUMMARY.—Whitewash the house. Pare or

new gravel the runs. Give the fowls the opportunity to clean their feathers. Continue to set the hens. Take care of young chickens, and keep the ducklings from getting very wet.—*Poultry Chronicle.*

HOW TO SUBDUE A VICIOUS HORSE.

A correspondent of the New York "Commercial" gives the following account of the method adopted by an officer of the United States service, lately returned from Mexico, to subdue a horse who would not allow his feet to be handled for the purpose of shoeing: "He took a cord about the size of a common bed cord, put it in the mouth of the horse like a bit, and tied it tightly on the top of the animal's head, passing his left ear under the string, not painfully tight, but tight enough to keep the ear down, and the cord in its place. This done, patted the horse gently on the side of the head, and commanded him to follow, and instantly the horse obeyed, perfectly subdued, and as a well-trained dog; suffering his feet to be lifted with entire impunity, and acting in all respects like an old stager. The simple string thus tied made him at once as docile and obedient as any one could desire. The gentleman who thus furnished this exceeding simple means of subduing a very dangerous propensity, intimated that it is the practice in Mexico and South America in the management of wild horses."

MANAGEMENT OF MILCH COWS IN THE FALL AND WINTER.

How a city mouth waters for a pitcher of rich pure milk from the farm-house. A correspondent of the Cincinnati Times, thus discourses:—

"In a former number you made the following remarks:—

That beets, parsnips and carrots were excellent to produce milk; but you say you prefer carrots to produce not only rich milk, but rich butter; and you ask if there is a better vegetable that can be grown for milch cows, all things considered. Let us hear from those who are in favor of its cultivation. There are many kinds of feed used for cows, such as slops or swill, and malt from distilleries; but this cannot be had by every one who keep cows for the production of milk. I hope the day is not far distant when such feed cannot be had for cows or any other animal.

Before the blight came on the potatoe, that tuber was more extensively grown to feed to cows in order to produce larger quantities of milk, but not of good quality. I do not think it would do to

raise potatoes to feed cows at present prices.

The vegetable I wish to recommend as the best, all things considered, is white, flat turnips.—Some, perhaps, will object to the turnips because, it will affect the taste of milk and butter. So it does if fed raw; this can be avoided by boiling.—For each cow, boil half a bushel of turnips soft; while hot add five or six quarts of shorts, which will swell, and you will get the worth of it. A mess like this fed to a cow once a day, will produce more milk of a good quality than any other feed of the same cost. Turnips fed in this way, do not taint the butter or milk. One thing in favor of turnips, as food for cows is, they can be sown as late as August, or the first of September. I sowed some as late as September last year, which were very fine. Turnips are also very profitable for pigs, when boiled in the same way as for cows.

DOUBLE HARNESS SAFETY STRAP.—Accidents not unfrequently occur in descending hills with a pair of horses, by the breaking of the ring, kidney-link or hames, which, in their connection with the pole strap, are the only means by which the carriage is kept from coming in contact with the horses in their descent. This danger can easily be avoided by making use of a small leather strap 10 or 12 inches long (more or less) and 1 1-2 inch wide, with a buckle at the end. Put this round the collar when harnessing, and pass the pole strap through both the safety strap and the ring, and in case the kidney link or ring should break, or the harness slip off or break, the strap, being around the collar, will hold firm, and keep the carriage in its proper position.

FLOWERS.—The perfume of flowers may be gathered in a very simple manner, and without apparatus. Gather the flowers with as little stocks as possible, and place them in a jar three parts full of almond or olive oil. After being in oil twenty-four hours, put them into a coarse cloth, and squeeze the oil from them. This process, with fresh flowers, is to be repeated according to the strength of the perfume desired. The oil being thus thoroughly perfumed with the volatile principle of the flowers, it is to be mixed with an equal quantity of pure rectified spirit, and shaken every day for a fortnight, when it may be poured off, ready for use. As the season for sweet scented blossoms is just approaching, this method may be practically tested, and without any trouble or expense. It would give additional interest to the cultivation of flowers.

Be sure to clear out all weeds and grass this month

BROWN BREAD—WHEAT BRAN.

Mr. Editor—It is said by those who are familiar with the statistics of the bread trade in our principal cities, that there is a rapidly increasing prejudice against brown bread among all classes.—Why is this? Brown bread—that from good maize—if properly and honestly manufactured, is certainly far more conducive to health and longevity than bread from wheat flour, especially if the latter is bolted, and only the finer parts kneaded into the loaf. It may not be altogether so aristocratic an article of diet; but of its superior value and cheapness there can be not the slightest doubt. In France the question whether the bolting of flour is advantageous was very early agitated, as early, indeed, as the reign of Louis XIV.; for an ordinance issued by him in 1658, prohibited, under certain penalties, the regrinding of bran and its mixture with the flour. It is not always easy to ascertain how much bran a bushel of wheat contains, as different specimens of wheat give very different results. That bran is not an entirely worthless or innutritious article, is fully demonstrated by the results of an analysis made by M. Millon, of France—the sample being from a soft French wheat grown in 1848:—

Starch, dextrine and sugar,	53,00
Sugar of licorice,	1,00
Gluten,	14,90
Fatty matter,	3,60
Woody matter,	9,70
Salts,	50
Water,	13,90
Incrusting matter and aromatic principles,	3,40
	<u>1000.00</u>

The logical inference deducible from the foregoing tabular exhibit is, that bran is a nutritive substance, and of course, as such, should not be thrown away. Every pound of bran which we sift from the ground wheat diminishes the value of the mass, and consequently is a clear loss to the consumer, and indirectly to the nation. The economical suggestion, therefore, which springs from these views is, some method should be adopted to economise every particle of the alimentary matter contained in the product of the wheat field, and that if regrinding is necessary to the accomplishment of this result, it should be performed. The mania (we can call it nothing else,) so universally prevalent at this day for flour “white and fine,” and for bread so light that it can be seen through, is hurrying thousands into the dyspepsia, and from dyspepsia into the grave, to say nothing of the pecuniary distress to which it gives rise as a legitimate result.

The more simple, or, in other words, the coarser our accustomed food, the more certain we are to escape disease. The ancients, if we may credit the most authentic historians, were far less addicted to luxury than the moderns. Galen asserts that he had seen butter but once in his life.—Anciently, the Greeks and Romans used no alcoholic beverages, they being wholly unknown, as were tea, coffee and chocolate. They were also ignorant of the tropical spices—mace, nutmeg, cloves, ginger, pepper, curry and pimento. The bean in common use was a variety indigenous in marshes, and of which they were excessively fond. Spinach, buckwheat, sago, tapioca, salep, arrowroot, and even the potato, were unknown, as likewise the orange and tamarind. Their usual daily food consisted of articles now almost universally unknown or neglected. Among their favorite dishes, we find enumerated the following: the mallow, the ox-tongue (herb), sweet acorn, and lupine. Radishes, sorrel and lettuce were held in the highest esteem. The flesh of wild asses, of young dogs, of the dormouse, the fox and the bear, was considered a luxury, and eminently conducive to agility, health and strength. They partook also habitually of the flesh of lizards, of paroquets, and other rare birds, and were remarkably fond of the crustacea and testacea, employing as seasoning rue and assafoetida.

Philadelphia, Jan- 15, 1855.

B.

REMARKS.—The above is a valuable and an interesting article, from a high source, and such as is not often found in the “Housekeeper’s Department” of a newspaper or periodical. The statements made are, in our view, mainly correct, and deserve the serious attention, not only of housekeepers, but of the whole community. It is undoubtedly true that the wholesome, highly flavored, substantial bread that we formerly enjoyed, is gradually passing away, and the unwholesome innutritious article, as white as starch itself, has taken its place. This cannot last. The high qualities of maize, too, for human consumption, must shortly be recognized; and the almost totally discarded, but to us delicious rye bread, must again assume its place at the family board.

Germantown Telegraph.

BREEDING TURKEYS.—Every turkey breeder is not aware of it, but it is a fact, that of either sex, one old turkey is worth two yearlings for rearing young ones. A turkey does not arrive at its growth and maturity till the next fall after two years old, and of consequence, to its full strength and vigor for breeding in the best manner. The continual repetition of keeping young gobblers and pullets for breeding, as some people do, reduces the size of

their young till they arrive at scarcely half the weight they should do. Besides this, the young of these immature birds are exceedingly tender, and much more difficult to raise than those of old birds. We have tried this thing thoroughly, and are convinced of the difference.

Were we to choose our birds for the very best breeding, both hens and cocks should not be less than three years old, and then the cock should be from a different stock from the hens. We think that turkeys bear breeding from close affinities less successfully than any other fowl—at least we have found it so—and we would never breed a cock to hens when closely related, if it could be helped.

Montgomery Ledger.

FACTS CONCERNING LIGHTNING CONDUCTORS.

No case has been met with where life has been lost by lighting in a building or vessel furnished with metallic lightning-conductors of any kind.—No instance of loss of life by lightning in a steam-boat or Iron vessel of any kind, or in a railroad car, or Iron building, or buildings containing Iron castings or bar Iron in large quantity. The *first* shows that lightning-conductors afford absolute protection to human life, and the *second* evidence that metals do not attract lightning as to render a contact with them dangerous during thunder showers. It will be a comfort to many persons who are alarmed by the severity of thunder storms to know that they are safe in steamboats and in railroad cars—safe in buildings and vessels furnished with lightning conductors, safe in Iron vessels and Iron buildings and safe in ware-houses filled with Iron castings or bar Iron. The knowledge of these facts were sure to calm the minds of such during violent storms. Persons struck down by lightning should be drenched freely with cold water. If animation is not restored after three hours—continue the drenching. In one case animation was restored after six hours drenching with cold water—this fact should stimulate effort. Trees around buildings afford no protection to the buildings against lightning.

SANATORY SUBSTANCES.

As the warm weather is now at hand, it will no doubt be very useful information to many persons to be told what are the best substances for removing offensive odors from sinks, &c. Copperas, or sulphate of iron, is a very excellent substance for slushing drains and sinks. By dissolving half a pound of it in a pail of hot water, and throwing it into a sink once a week, it will keep down all offensive odor; and from the situation of many houses in all our cities, it would greatly tend to health and pleasure for the inhabitants of each to do this. The Chloride of lime, or the Chloride of zinc, will answer just as well, but these are expensive substances in comparison with copperas (sulphate of Iron.) Lime is also very useful, and is no doubt a cheap deodorizer, but it is not a very good one; copperas therefore is preferable to all these substances. But there is another substance which is far superior to either copperas, the chloride of lime, or zinc, as a deodorizer, both as it re-

spects its qualities and economy; we mean charcoal powder—made of ground wood charcoal.—Charcoal powder possesses the quality of absorbing ammoniacal, sulphuretted hydrogen, and carbonic acid gases in superior degree to any other substance. Placed in the vicinity, or spread among decaying animal or vegetable matters, it absorbs all the offensive and hurtful gases, and keeps the air sweet and wholesome.

We really hope that charcoal powder will soon come into extensive use as a deodorizer and disinfectant. It appears to us that it can be ground in mills in the timber regions where wood is cheap, transported to our cities, and sold at a very moderate price. We are convinced that a plentiful use of fresh ground wood charcoal for sinks, damp floors, and the drains of cellars, would greatly tend to prevent disease in many places, by the absorption of miasma.—*Real Estate Reg.*

STEAM-PLOUGH.—A ponderous steam-plough, built by Messrs. Hittinger, Cook & Co., of Charlestown, for the inventor, was tried, so far as locomotion is concerned, on Thursday afternoon of last week, in Chamber street. The machine comprises a steam engine, similar in form and construction to a pile driver, elevated on two large broad iron-tired wheels, with two smaller steering-wheels in front.—Beneath the machine are six iron ploughs, suspended so as to yield to any unevenness in the surface of the ground. The engine has two pistons, like a locomotive, and either wheel may be worked separately, so as to turn the machine with facility in a small space. It worked very well for a first trial, and was turned mostly by its own power in the street. We should think it could be efficiently operated in a large field adapted to its purpose, and would walk over large space in a short time.

Boston Real Estate Reg.

HOW TO DO UP SHIRT BOSOMS.—We often hear ladies express a desire to know by what process the gloss on new linen, shirt bosoms, &c., is produced, and in order to gratify them, we subjoin the following recipe:—

Take two ounces of fine nice white gum arabic powder, put it in a pitcher, and pour on a pint or more of boiling water, according to the strength you desire, and then, having covered it, let it set all night, in the morning pour it carefully from the dregs into a clean bottle, cork it, and keep it for use. A tablespoonful of gum water stirred into a pint of starch, made in the usual manner, will give lawns, either white or printed, a look of newness, when nothing else can restore them after washing.

A GOOD SUPPLY OF "MEDICINE."—At Bangor (Me.) on Wednesday last, the Marshal seized 1,500 gallons of liquor, which he found in an apothecary's store.

For the Arator.

Tarboro' No.-Ca., June 1st, A. D. 1855.

MR. THOS. J. LEMAY. *Dear Sir:* The April, May and June numbers of the Arator are now before me, and I am pleased to say, they compare favorably with the best agricultural periodicals of the country. A little exertion on the part of the friends of Agriculture throughout the State will establish the Arator & Cultivator (for I should be glad to see both prosper and act as co-laborers, instead of being antagonistic) on a permanent footing, and encourage the conductors to render them worthy of the great cause in which they are engaged. The interest now taken in planting, farming and gardening, can surely sustain two papers, and a little rivalry will act as an incentive to make both better.

But to my point. Having completed our preparations on Panola for the crop of '55, I propose to give you an account of them in a plain unvarnished manner, not in an egotistical or boasting spirit, I hope, but to show to the Farmers of the State what can be done, particularly in the way of making manure. It will not be out of the way here to explain, that to make and apply such large quantities of compost, an extra number of hands and teams is necessary. For instance on Panola there are six or eight hands and as many mules more than are absolutely necessary to cultivate the crop. In this way, we manage to keep the crop well tilled and occasionally during the cultivating season, to gain a day or two for manure making. During the summer of '54 we managed to get together fifteen thousand (15,000) loads of compost for the crop of '55, and so soon as the crops of corn, cotton, peas and potatoes were housed, we went regularly to work with the whole force. This occurred about the first of December. In this month and up to the 15th of January we composted upwards of 6,500 bushels of cotton seed (using from 25 to 40 bushels of seed to every 100 loads of dirt of 5 bushels to the load,) all the stable manure from the farm and all we could purchase in Town. During this time, we also purchased 15 Tons of Guano—8 of Peruvian and 7 of Mexican—by riddling it of its lumps and then mixing 100 pounds of the one with 100 pounds of the other, 200 pounds of the mixture intended for an acre. In addition to this, we have two hog lots of about $\frac{3}{4}$ of an acre in size and a cattle yard of $\frac{1}{2}$ acre, in which we hauled large quantities of ditch bank and soil from the woods, occasionally burning ashes and mixing it with the material in the lots.

On the 15th day of January, we commenced the laborious operation of hauling out the compost, and finished the work the last week in March, being over two months engaged at it, running from 12 to 15 carts and wagons.

We estimate—(and I am sure, we are rather under than over the mark) that we have applied to the growing crop 25,000 loads (5 bushels to the load) of cotton seed composted, 15,000 do. of stable manure, and 10,000 do. made in the hog and cattle yards, footing up 50,000 loads for the crop of this year.—This manure has been applied mainly to our cotton crop, of which we have 190 acres; the application has been from 150 to 450 loads per acre according to the quality of soil. The 15 tons of mixed guano has been applied at the rate of 200 pounds per acre, mainly to the corn and oat crops, of which we have 190 of the former and 50 of the latter.

This labor has been performed during the winter and spring together with the preparation of the soil.

by 34 hands of various sizes and ages, and 23 head of working animals.*

With an average season we calculate to make a 400 pound bale of cotton and 5 barrels of corn per acre.

I will furnish you with an article for your December or January number giving you the result.

The prospect at present is fair, the crops are backward, 'tis true, more so than usual, but the stand of cotton and corn is good and wears a healthy appearance.

Very respectfully,

Your ob't servant.

JNO. S. DANCY.

* Note.—In addition to the labor performed during the year '54, there were 100 acres of land sown broadcast with peas (the Southern field pea) and as great a number of acres will be treated in the same manner the present summer, and from experience, we consider the sowing of peas broadcast for fertilizing purposes, a most valuable adjunct in the improvement of land, second only to the composting system, now in such general use in our County.

For the Arator.

ANY SYSTEM OF MANURING BETTER THAN NONE.

MR. EDITOR: As making manure is all the rage, in some quarters, (and should be in all,) I will give you my method.

I collect carefully and regularly every article of litter, filth and rubbish that I can find in and about my premises, and sometimes haul leaves—green and dry—from the woods, and throw together in my compost heaps; and I find all vegetable and animal substances, thus managed, make rich and fertilizing manures. In this way, (having the most of the work done by small shavers, who are unable to perform other labor,) I raise a hundred two horse loads, a year, and have it ready to put in early in the spring, and, I tell you it makes the corn crack.

In addition to this, I enclose for a cow pen about half an acre, and plow it up deep, and confine my cows in it every night, (and this is done winter and summer, having shelters made in the winter pen;) I then haul into the pen, peat, muck, and woods mould mixed with leaves, and cover it all over an inch or two thick, and once a month turn it all under with a two horse plow, covering it again as at first. I continue to take it through this process five months, which from the first of March—by which time I have all my manure in the field—brings me to the first of August, when I plow and scrape up as many loads as I have put on and haul out to my wheat lots, which I manage to locate convenient, to be spread when the ground is broke for wheat. I then continue the cattle on the same pen until the 15th of August, when I move the pen and sow in turnips. In the five months, I get a hundred and fifty loads of tip-top manure, which tells as well on the wheat as guano, and a great deal better on the land. I carry the new pen through the same process until the manure is taken off in February, and the half acre remains

permanently improved, for corn, cotton, oats or potatoes. I thus improve one acre permanently every year, and get, from twenty-five head of cattle, three hundred loads of manure for other fields.

I save my stable manure as follows: Once a week, I clean out every stall, which I keep well littered with straw and leaves, and put it up in square rail pens, putting in alternately the pure manure and green weeds, rich woods mould and muck, about four times as much of the latter as I do of the manure, and leave it covered over thick with the dirt. When the pens are about head high, becoming inconvenient to shovel up. I cover them over with slabs, and let them remain until the manure is wanted for use. These pens are made, at convenient distances in the field where the manure is to be used.—If in cultivation, when hauling is done they are made at intervals on the side easiest approached with a wagon, without injury to the growing crop.

In this way, from five horses, I raise two hundred and fifty to three hundred loads of very strong and valuable manure a year.

From my hog pens, which I have not paid as much attention to, by littering them with leaves and dry woods mould, I get from 25 to 30 loads a year.

Since I have been using ashes, with my compost heaps, I find the quality of the manure improved.

Thus I make about 775 two horse loads of good manure annually, which I estimate to cost me from \$150 to \$175 in time and labor—not a cent of money. The increased product is, 85 barrels of corn at \$3 a barrel, \$255—50 bushels of wheat at \$1.25 a bushel, \$62.50—5,000 lbs. fodder at \$1 a hundred, \$50—making a total, to say nothing of peas, straw, &c., of \$367.50, from which deduct cost of making manure, \$175, and I have an annual clear profit of \$192.50, besides a permanent improvement to the land, increasing its value at least three dollars per acre.

Mine is a very imperfect system, resulting from my lack of skill in planning, and want of energy in executing; but as I perceive it does better than no system at all, and many are laboring hard without any, I have been tempted to present it to your readers, under the hope that some one of small means like myself, who has no system of making manure, may be induced to adopt some plan of the kind, as I find my poor plan better than none.

In regard to covering the manure, the trouble is well paid in the saving, especially in the strength of the manure, as it should be secured as much as possible from the action of the sun, air and drenching rains.

As respects its application, it is sometimes most profitable to put in the drill or hill, and sometimes best to broadcast. In either case, no more should be spread in a day than will be covered. In broadcasting, it should be thoroughly covered, but not put in too deep, and finely mixed with the soil. Land thus manured may be kept constantly improving. Mine is a medium grey soil, on clay foundation, and has been raised from two to an average of five barrels of corn to the acre.

S. H. M.

TO CURE EARACHE.—Earache may be relieved by dropping a little sweet oil and laudanum, warm into the ear, and applying hot salt in flannel bags, so as to keep the part constantly warm.

For the Arator.

MR. EDITOR: Will you *and some of your correspondents* give me a little information?

What, if any, is the objection to sowing small grain twice or thrice on the same ground?

Wont land improve sowed several years in succession in small grain of any kind and not pastured or grazed?

How does oats injure land more than any other small grain?

I don't believe the last question can be affirmatively answered and proven, but it's the common opinion through the country that oats injure land more than any other small grain. My notion is, that it's turning in all the poor cows, horses and hogs that one has, after the oats come off, that injures the land.

WAKE.

June 14, 1855.

Remarks by the Editor of the Arator.—Our views were partially given, on the the subjects embraced in the foregoing interrogatories, in the first No. of the Arator; to which we refer, page 3, article "Rotation of Crops." We have not time, at present, for any extended comment. Moreover, we would prefer giving the opinions of persons of more experience and accurate knowledge, than those of our own, and hope some of our intelligent practical farmers will favor the public with an answer to the inquiries of "Wake" in our August number. We will, however, here remark, that the same objection to repeated successive crops on the same ground, appears to us to exist, to some extent, against small grain as against all other crops. It is universally conceded that all cultivated plants, taken from the land where raised, tend to exhaust the land and render it less fertile; but there is so much of the small grain crop left on the ground, in the shape of stubble, that, by sowing peas upon the stubble, and turning under the vines, the land may be kept in an improving condition; but will not produce the same grain in immediate succession, as favorably as it would a crop of a different species. One reason of this, we presume, is, the slowness of the stubble in decomposing; and another, the excrementitious matter of the preceding crop, which is inimical to the healthful growth of the same kind of plant, has not had time to decompose and mix with the soil: Hence, "the same kind of plants cannot be advantageously cultivated in continued succession. The same or similar species generally tend to grow feebly, or degenerate, or become more subject to diseases, when cultivated successively upon the same ground; and hence the rule which forms the basis of a system of regular alternation of crops is, that plants

of the same or similar species shall not be cultivated in immediate succession; and farther, the same rule has been thus far extended, that the same species shall recur at as distant intervals of the course as circumstances will allow."

It is true that some species exhaust the land more than others; and we think it probable that the oat is a greater exhauster than any other of the small grains, for the reasons given in our first number, and that there is, therefore, some cause for this opinion, which so generally prevails.—But we have no doubt the close pasturing which univarsally follows the oat crop, contributes much to its apparent injurious effects. It keeps down all other herbage, and leaves the land bare to the scorching rays of the sun during the hottest months of the year—leaves no blades of grass or herb to grow large enough to gather any nourishment from the atmosphere, and taxes the land to the utmost for every particle of nutriment furnished to the growing herbage, which is taken off as fast as it comes within the reach of the hungry animals. If grass and weeds were suffered to grow and turned under in the fall, with the stubble, the land would probably suffer but little, if any deterioration; but it would always be best to be followed by a crop of a different species, for the reasons given above. There is also another reason.—Crops which tend to the production of weeds should not follow in succession. All the small grains do this; and should therefore be succeeded by a crop whose culture will insure the destruction of weeds.

We shall recur to the subject, and publish the article on "rotation" from the American Agriculturist, promised in our April number, (which has been mislaid) if we can lay our hands upon it.

For the Arator.

Graham, June 19th, 1855.

Mr. Editor:—Will you or some of your numerous contributors furnish an answer to the following questions?

How can I prevent the weevil from getting into wheat? or how get rid of them after they are?

How do you make tomato catsup, and how Blackberry Jam?

I am a young farmer, and would like to know these things.

A SUBSCRIBER.

Answer by the Editor.—The question about the weevil is one of great importance, and we hope

some of our experienced wheat growers will answer it. At present we can only state that the article, from the Ohio Beacon, on the 101st page of the Arator, shows that it has been well ascertained, by experiments, the weevil may be headed by scattering, broadcast, newly slacked lime on the wheat about the time it is heading; immediately after a shower, or while the dew is upon it, so that the lime will adhere to the heads and stems of the grain. Threshing out the grain immediately after harvesting, tends to secure it against the depredations of the weevil; and it is the opinion of some if the wheat be sunned, after cleaned, it will be perfectly secure from the attacks of the insect.

To make Tomato Catsup.—Take a gallon of tomatoes, wash and cut them up, put them into a kettle, boil until done; then strain through a sieve, and add four table spoonfuls of black pepper, two ditto of cayenne pepper, three ditto of mustard, four ditto of salt, one ditto of alspice, a teaspoonful of cloves; all thoroughly pulverized; and one pint of vinegar. Put the whole in an earthen dish, or a porcelain kettle, and simmer over a slow fire for ten hours, stirring frequently. When done, stir in vinegar enough to make two quarts of the whole quantity of catsup, and bottle for use.

To make Blackberry Jam.—Take fine blackberries that are perfectly ripe. Weigh them, and to each pound of fruit allow three-quarters of a pound of fine loaf sugar. Mash the berries and break up the sugar. Then mix them together, and put into a preserving kettle over a good fire. Stir them frequently, and skim them. The jam will be done in thirty or forty minutes. Put it warm into glasses, and lay on the top a white paper cut exactly to fit the inside, and dipped in brandy.—Then tie on another cover of very thick white paper.

COAL ASHES.—A writer in the Practical Farmer gives his experience in the use of coal ashes. He says, I have now a bed of carrots, about two hundred feet long, and ten wide, in drills. The seed was sown unusually late, and I did not expect much of a crop. I had about a cartload of coal ashes—the result of the cooking stove—which had not been mixed in the manure heap; and not having any other use for them, I had them spread on one end of this piece of ground which I sowed with carrots. The ashes spread over about a third of the bed, and the carrots, where the ashes were spread, are more than twice as large as the other portions of the patch;—the stalks are much greener, and also double the size of the others. The whole piece was manured very lightly, as the manure yard was empty at the time.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.

RALEIGH, N. C. JULY 1855.

RAISE YOUR OWN PORK.

Every farmer, in North-Carolina, at least, should make it one of the principles of his domestic economy, to raise his own pork, and his proportion to spare, to supply the home market for those, who, not being engaged in agricultural pursuits, are compelled to purchase. Our farmers should firmly resolve, and be determined to see that not a dollar should go out of the State for the purchase of pork. Such a policy would promote their own individual interest, as well as that of the aggregate community. The importance of keeping their money from flowing out of the State, that it may remain for circulation, for improvement and all useful purposes, among those by whose industry it is made, is too well understood to need comment. The only question of moment, is, can the hundreds of thousands of dollars annually withdrawn from the pockets of our people, for Kentucky pork, be saved to the State by raising supplies among ourselves? In other words, could it be done profitably? All will admit its *possibility*. We contend, it can be done *advantageously to the raiser*, and no one will question, *beneficially to the rest of the community*. In this opinion, we do not advance any abstract theory or chimerical notion; but find ourself supported by the practice of some of our most thrifty and prosperous farmers, which knocks the objection of the less provident—that they can buy cheaper than they can raise—“into an exploded bubble.” How stands the case? We know some farmers who raise more cotton, according to their force, than their neighboring pork buyers; and make, in addition, plenty of pork and corn for their own support, and always have a surplus of both corn and pork to sell; and, moreover, always have fat horses, fat mules, and sleek and greasy negroes. They evidently have the advantage of those who depend on buying. And how do they succeed so well? The question is easily answered, without going into particulars, in few words: It is found in *good management and careful and diligent personal superintendence of their business*. By the use of a slop boiler; early spring vegetables; summer and fall root crops; rye sowed to be grazed in winter and eaten by the hogs, when ripe, in the field; field peas, with an early variety, in an enclosed field, to begin upon; clover and lucerne, in small lots, for sows and pigs; fruit, apples, plums, peaches, mulberries, &c.—by the use of these, systematically arranged and pursued.

every farmer, from the smallest to the greatest among us, will find it both practicable and profitable to raise his own pork. And more, if they will generally commence the work forthwith, we will venture the prediction that the Kentucky pork drovers will be driven from the State, entirely, in less than three years.

The foregoing remarks are also applicable to the raising of our own horses, mules, cattle and butter.

PUTTING UP SWEET POTATOES.

We would be glad to know the best mode for putting up sweet potatoes, to preserve them from rotting; and among your numerous readers, we trust (before harvesting time) the experience of some successful ones will give us the desired information. Wishing well to your enterprise, I remain, yours.

CHAS. H. ALEXANDER.

Topsail Sound P. O., New Hanover co., May 15, 1855,

Remarks by the Editor of the Arator.—We have used four methods of putting up Sweet Potatoes with success; to which we give preference in the order in which they are named below.

1st. From fifty to a hundred bushels in a hill, which is made as follows: If out of doors, dry dirt is raised in a circular form a foot above the common level, to begin laying the potatoes upon; in the centre of which three rough boards are set on end with edges together, forming a triangular flue to pass off the steam. Commence packing and carry up the pile of potatoes around these boards, in sugar loaf form, to near the top. After the potatoes are thus stacked carefully, cover them over three or four inches deep with dry corn stalks; then cover the stalks with such dirt as the potatoes grew in, four inches thick, pat it well all over, and the hill is finished. The mouth of the flue in the centre should be left open, until hard freezing weather; then stopped with hay. The potatoes should be carefully picked over before putting up, and all the cut and bruised ones thrown out for immediate use. The hill should be covered with a shelter that will keep every part of the hill from getting wet. We have repeatedly put up potatoes in this way, in an old open log house, and invariably with complete success.

2dly. Make the hill in the same way, in every particular, except, that instead of using corn stalks, cover with pine straw. Many put up in this way altogether, and generally succeed.

3. Put up in a hill without boards, and cover with the dirt taken from the patch, without any other covering, except a good shelter to keep out

the rain. We have tried this twice, and with such good success, that we shall put up a part of our crop in the same manner again the ensuing fall.

4. Dry cellars. Some of our Wake county farmers save their potatoes in dry cellars, and we learn from them they never fail to preserve them. One difficulty in this is, the want of cellar room for large crops.

Many of our farmers prefer potatoe houses.—They are made of logs from five to seven feet high—the logs being doubled—leaving three or four inches space between the outer and inner walls, which is packed with dirt. A floor is laid above, which is covered by some with hay or straw. They have two doors—one, (the outside) bored all over with auger holes, to admit air—the other (the inside one) is fitted tight to exclude air. Until very cold weather, the inside door stands open, when it is closed, and all danger of freezing is avoided.

A great deal depends upon the weather and condition of the potatoes when dug. To insure their keeping well, they should not be taken up too early, but care should be taken to prevent their being bit by frost.

We hope some of our potatoe raisers, will furnish us with a statement of the best plan for both raising and saving that valuable crop.

NASCENT MANURES.

Our attention has been called, by a highly intelligent friend who takes great interest in agricultural improvement, to the following very interesting article from the pen of Prof. STUART, Agricultural Chemist of the State of Maryland, originally published in that able agricultural monthly, the American Farmer, and copied into the American Journal of Pharmacy—a work of high scientific reputation. We take much pleasure in presenting it to the readers of the Arator, as its perusal cannot fail to afford them great satisfaction and instruction. The experiment of Prof. Stuart, stated in the article, with soluble silica, or silica in a nascent state, on his crops of wheat and corn, is particularly interesting, and may lead to important results. The experiment proves that, if a cheap agent can be found by which sand can be reduced to a nascent state, that is, to a soluble condition, it will form one of the cheapest and most valuable fertilizers that can be put upon our land. We regret that Prof. Stuart has omitted to state how he obtained the soluble silica used in his experiment. It is true he states that caustic lime has a tendency to decompose, and of course reduce

it to that state; the authorities inform us that “on uniting one part of silicic acid with three of carbonate of potassa a vitreous mass is formed, which is deliquescent, (attracts water from the atmosphere,) and may be dissolved completely in water;” and hydrofluoric acid, from its powerful action on glass, would probably produce a similar result; but we cannot infer that his soluble silica or sand was procured by the use of either of these agents. It will be seen that the learned Professor is also a *practical, working* farmer, which gives additional weight to his experiments and opinions.

ON NASCENT MANURES.

By DAVID STUART, M. D.

Chemist of Maryland Agricultural Society.

Reasoning from analogy, all manures must be presented to the plant in the nascent state in order to their assimilation; but a safer proposition, perhaps, would be that many elements of plants, while they exist in their normal or natural condition, are as perfectly unassimilable, or as incapable of affording nourishment to them, as they are to animals.

A hundred illustrations of this law will at once occur to every intelligent mind; and the facility with which even inorganic compounds unite while in the nascent form, is familiar to all. Every molecule of matter, whether composed of compound or simple atoms, seems to have a form of its own, and until it has assumed this form, or state of aggregation it is in the nascent state, or in an allotropic condition.

While in this nascent state, its tendency to unite with other bodies which have an affinity for it, is wonderfully increased; indeed, it is often the only condition in which two substances will combine.—The celebrated Faraday attaches so much importance to this nascent, as contrasted with the normal condition, that a few months since he expressed the opinion that ozone is merely oxygen in the nascent, or allotropic condition.

Lime and magnesia, when recently slacked, are capable of uniting with other substances; if, however, the slacked lime or magnesia is kept for a long time, even although perfectly excluded from the air, it will gradually assume the form of granules, and subsequently these molecules will form crystals, or the lowest order of organisms; and these organs seem to possess a degree of resistance to external force analogous to the resistance of the higher organisms; indeed, the more perfect crystals of the same substance and in the same solution, will grow and become more perfect, at the expense of those which are irregular. Upon this principle, the imperfect crystals may be said to be approximating to the allotropic condition, or nascent state, while the perfect crystal is in the normal condition.

It may be said that extent of surface is one of the causes of this, and a better illustration is sand, or quartz, which is perfectly insoluble in its natural or normal condition, however fine the powder, even in some of the strongest acids. But sand or silica is frequently found in the nascent condition, and then it dissolves readily in water; moreover, it can be kept in this condition for years; but if heated to the temperature of 260° it assumes its normal condition, and becomes perfectly insoluble even in acids; where-

as before, it would dissolve in acids, alkalies, or pure water.

Lime and Magnesia, while in the caustic state, are capable of converting sand into soluble silica; and this is perhaps one of the good effects of liming, especially when we consider the remarkable influence that soluble silica exerts in absorbing ammonia from the atmosphere, and also from ammoniacal manures. We may also account thus for the crumbling of stable walls, the moist condition of old walls, and especially those that are exposed to ammoniacal exhalations.—Moreover, we have a plausible mode of accounting for nitre beds, and the remarkable value of old plaster; also the purifying influence of "White-washing," if it is done with caustic lime, and not with whiting or carbonate of lime. Lime, while caustic and moist, in contact with sand, converts a small part of the surface of the grains of sand from the soluble to the insoluble silica; and this is the reason why caustic lime is necessary to the formation of good mortar, as it is not (as is almost universally supposed) a mere mechanical mixture of lime and sand, neither is it grains of sand cemented together by the induration of lime, but the actual solution of the surface of the grains of sand produces a still more intimate union.

Well, this soluble silica gradually absorbs from the atmosphere the ammonia, for which it has a remarkable affinity; and as ammonia is the vehicle of poisonous exhalations of disease, as well as the perfume of flowers, these exhalations are so concentrated upon the walls of hospitals, that it sometimes becomes necessary to remove the plastering, in order to get rid of erysipelas and other diseases.

Nearly, or quite all of the nitric acid of commerce, was no doubt originally derived from ammonia in the order above referred to, for, if my theory as above stated is admitted, then, every authority will sustain me in saying that old plaster contains ammonia, and this ammonia is converted into nitric acid on the wall. Salts of nitric acid can be seen by any one on the surface of old walls. Moreover, the leachings of old walls have frequently been used in the manufacture of gunpowder, and old plaster always enters into the composition of artificial nitre beds.

It will be readily admitted that silica can never enter the rootlet of a plant, however fine the powder, unless it is in solution, and that the finest powder of sand or silica differs as much in solubility from nascent silica, as sand differs from sugar. The importance, then, of soluble silica to grasses and wheat, and especially to corn, and, indeed, its value as manure has long been recognized; (see Liebig's Chemistry, Am. Ed. 1841, p. 200.)

It was first supposed that potash was the vehicle for its conveyance to every part of the plant; but the modern idea is, that ammonia is the main instrument of its conveyance; certain it is that it loses its base at the instant of its deposition on the stem; and if potash were the base, then it would be necessary that the potash be carried back again to the earth, and the plant would be constantly embarrassed by excrementitious matter; whereas, the ammonia being volatile evaporates, and leaves the glassy coating, or element of strength, on the surface of the stem. Thus, it is found that more ammonia is actually exhaled from plants, than we ever give them in the form of manure; and it is strongly suspected that soluble silica is really the manure, while ammo-

nia is merely the vehicle for the conveyance of soluble silica through the plant.

When the carcass of an animal falls in a field, the luxuriant grass or grain "falls," on account of the absence of the relative amount of soluble silica, or the excess of ammonia uses up at once all of this necessary element that is available.

Two years since, I manured two lands in the centre of my oats field, the one with Peruvian Guano, the other with soluble silica, leaving a land unmanured between. The proportion of straw on the guanoed land was very much increased, but last summer, the same field was in wheat, and a corresponding diminution in the proportion of straw was noticed on the land that had been guanoed two years since; and what is more remarkable, the lands on each side of the guanoed land, averaged 746 lbs. more of wheat straw per acre, although no manure of any kind had been applied to either since it was in oats. Whereas, the silicated land not only produced more straw than either of its unmanured neighbors, but also excelled the guanoed land in wheat nearly three bushels per acre, and ripened earlier than any other part of the field.

The difference between the silicated land and the unmanured, averaged 1966 lbs., while it also produced nine and one tenth bushels of wheat more than the adjoining unmanured lands.

A land of my oats field of last summer, exhibited the same increase in the weight of the straw; although no silicates have been applied since it was in corn two years since.

But the most remarkable result was obtained in my corn field of this year, where the corn on the silicated portion averaged 93 lbs. per shock, while the part unmanured only weighed 42 lbs per shock; each shock represented 64 hills of corn, and the average of 31 shocks was taken. This manure was applied in my presence, and I personally gathered and weighed the produce of each separate shock in the field, with my own hands; therefore, I can vouch for the correctness of the results. And now, can we not account for the well known and remarkable efficacy of dissolved bones on this principle, when compared with normal phosphate of lime, whether it be the form of bones-ash, ground bones, or phosphate guano?

"Bones have been used with profit, at the rate of \$20 to \$60 per acre;" and it has been repeatedly demonstrated that one bushel of dissolved bones, for immediate effect, is equal to five times as much ground bones; in other words, that one pound of nascent or soluble phosphate of lime, is worth more than five pounds of normal or natural phosphate of lime, or bone earth. It will be admitted that every acre of land on the face of the earth, contains from one-tenth of one, to 4 per cent. of lime, and magnesia; and if only one-tenth of one per cent, at the depth of cultivation, even then, each acre must contain 1500 to 2000 lbs. of lime and magnesia. Now, it is manifest if 10, or even 30 bushels of dissolved bones were applied to the acre, the first rain would convert all of the free phosphoric acid, or bi-phosphates that they contain, into neutral nascent sub-phosphates; and it is, therefore, nascent sub-phosphate of lime, that is taken up and assimilated by the plant. Thus, we are enabled to account for the wonderful effects of what are called in commerce, bi-phosphates, which really contain very little free phosphoric acid, but all of the phosphoric acid exists as neutral nascent phosphate of lime.

The fact is, that dissolved bones are unmanageable as a manure in this country. [in England bi-phosphates are applied in solution,] until reduced from a fluid to the form of a powder, by the means of ivory black, guano, or some less valuable diluent; and the universal distribution of carbonate of lime, etc. in these, converts nearly all of the bi-phosphates into neutral nascent phosphates or sub-phosphates.—During the past summer, I have been experimenting on two separate fields, with four of these compounds, two of which were made in New York, and two in Baltimore; the most remarkable results were obtained from experiments made upon a few hills of corn. But I will confine my statement to two series, where whole rows of shocks were compared with contiguous unmanured rows; the average of 23 shocks, each shock representing 64 hills, exhibited a difference of about 25 percent; or the manured 42 lbs. per shock; and these manures were applied in my presence, at the rate of ten bushels per acre broadcast, and I gathered and weighed the corn in the field myself.

Now, it is most probable that no atom of free phosphoric acid, or bi-phosphate of lime, ever enters the rootlet of a plant without destroying it; and, having proved that a solution of bones would necessarily become precipitated in contact with any soil, we are driven to the conclusion that this precipitate or nascent sub-phosphate is the valuable manure, and we take it for granted that it will preserve the nascent form for some time in moist situations, as we know that moist oxide of iron will continue to preserve this form, as the antidote for arsenic, for weeks together. Ultimately, however, it also loses the nascent and assumes the normal form, and becomes so insoluble, that five times the dose is required, in order to afford the soluble material for the same proportion of arsenic. Thus it is with phosphate guanoes and bone dust; none of them are absolutely insoluble in pure water, and when thus dissolved as sub-phosphates, they are converted into the nascent form, and more readily redissolved than before their solution.

The contact of a piece of wood or string, has been known to hasten the solubility of the most insoluble substance; for instance, the inner part of a metallic worm of a still, opposite a wooden support has been known to dissolve in the distilled waters passing through it, and the same remark is made with regard to hydrant pipes; the normal condition of insoluble bodies is then disturbed, and the allotropic or nascent condition produced, by contact with vegetable substances in a state of change; this, then, may account for the influence of organic manures, and indicates the philosophy of the modern plan of manuring in Europe, which is by hauling out the manure on the field, load by load, as it is generated, instead of permitting it to ferment in heaps in the stable yard. Now, query, would it not be still better to stratify it with powder of feldspar, phosphite, or phosphatic guano, and concentrate this disturbing force of fermentation upon the elements, which, when reduced to the nascent state, are worth more than the one or two per cent. of alkalis, etc. in the manure itself.

It is still a question with physiologists whether nitrogen is ever assimilated by plants, much less by animals, in its normal condition; and it is a curious fact, that both the plant and animal may starve, when fed on carbonaceous food exclusively, although both are bathed in an atmosphere containing four fifths of nitrogen, which is perfectly useless to both, because not presented in the nascent form.

American Farmer.

A WORD ABOUT FRUIT

Who does not love Fruit? who does not delight to talk about good fruit? who does not know that good ripe Fruit is wholesome and nutritious for both men and animals? and who does not wish he had an orchard abounding in a variety of the best and most delicious fruit? But how few, even among those who have the means, make any efforts to put themselves in the possession of such a treasure? Why is this so? It is attributable to ignorance, thoughtlessness, want of system, or laziness; for every part of North Carolina is adapted to all the fruits of a temperate climate. Here we can raise successfully not only the apple, the pear, the peach, the plum, the cherry, but the apricot, the nectarine, the grape, the fig, the strawberry, &c. &c.

Now, if the Arator can contribute in any degree to remedy the defects which lie in the way of their production—to impart information to the ignorant, to awaken reflection in the minds of the thoughtless, to lead to the adoption of system among the careless, and to arouse the indolent to action—it will contribute much to the prosperity and happiness of our people. That such must be the tendency of the information thus spread before the public, drawn from facts and experience, none can doubt—not even the most obstinate unbeliever in the value of agricultural papers.

We rejoice to observe that there is among our people a growing interest and increasing effort on this subject—having had its origin in the information and advice imparted in papers and books, derived from science and experience; and we hope to see the spirit universally diffused; for incalculable benefit must result from it. Fruit is not only a luxury and conducive to health, but may be made a source of great profit.

It should be carefully cultivated, then, as a matter of pecuniary interest. We state nothing new, when we insist on it as a profitable adjunct to a farm, for stock. All animals love it, and almost all will thrive on it, if its quality, be good—not only serving as a nutritious aliment, but as a preventer of disease, and promoter of health. An orchard of four or five acres of apples, peaches, pears, and plums would keep a number of hogs in excellent condition from July to the last of September. The probability is the same quantity of land would not feed better, in corn; for if the orchard be properly cultivated—ploughed at least every spring—it will produce a pasture of crab grass, which of itself would be valuable. But fruit is profitable also as an article of trade.—Nothing sells higher or more briskly in this or any


other market, than fruit—another evidence of its value. Good fall and winter apples are seldom lower than a dollar a bushel in Raleigh—often higher than otherwise; and the supply is never equal to the demand. Moreover, besides furnishing home markets abundantly, now that we have facilities of transportation by railroad, and as our fruits ripen a month or two earlier than they do at the North, our farmers, as was justly remarked by Judge RUFFIN, at the late meeting of the State Agricultural Society, could raise fruits very profitably for the Northern markets; and he said truly that a barrel of early peaches or apples thus raised in North-Carolina and sold in New-York, would bring as much as a barrel of flour, and be raised at less expense. Fine peaches are often sold in Philadelphia and New-York at 12½ cents each, and not a whit better than can be raised, and are raised, from the rich varieties introduced here by the scientific efforts of Joshua & Thomas Lindley. Who will try it? Nothing can be lost, by the experiment. The demand at home, will make the choice varieties of peaches or apples always a highly profitable crop, if difficulties should lie in the way of selling them abroad. An orchard of the fine winter apples, in Western North-Carolina, of a thousand trees, in fifteen years, would be brought to full bearing, and would thereafter yield an annual product of ten thousand dollars worth of apples.

We shall not undertake to give particular directions here, though many new beginners need them, as we shall recur to the subject. But we will say, great care should be taken in the selection of the grounds, and in putting them in. We have not here in the South yet learned to do the thing nicely and thoroughly as they do in the North. Many plant fruit trees on worthless land, because it will answer for nothing else. "This might do," says an experienced planter, if they would remove four to six feet square of the clay, full three feet deep, and fill up the hole with earth from virgin soil or the wood-pile, and then run a sub-soil eighteen inches deep." Instead of this, with some exceptions, people generally dig a hole some 15 or 18 inches square, about 8 inches deep, make the roots adapt themselves to this size; plant sometimes deep and sometimes shallow, according to the convenience of digging a hole; and let it grow or not, as it may. The land is then cultivated in anything that suits convenience; the bark of the trees is bruised and rubbed off by the traces in careless ploughing: the trees are scrubby, the fruit is notty; and the orchard is finally abandoned; and no wonder. We shall succeed in persuading some to do better—others will follow their example—and thus we shall do good.

TERMS OF MEMBERSHIP OF STATE SOCIETY.

We state, for the information of an esteemed correspondent and all others who desire to become members of the State Agricultural Society, that the initiation fee for membership in said Society is three dollars, which may be remitted to Mr. FABRUS J. HUTCHINS, of this city, who is Treasurer of the Society; and upon the receipt of the subscription money, he will enter their names as members, and forward receipts. It is hoped many of our citizens in every county will take early steps to become members of the State Agricultural Society. Every prominent farmer, every respectable mechanic, every liberal merchant, every publicspirited lawyer and physician—all the patriotic citizens of the State, who have the ability, ought to come forward and enrol themselves among the members of this noble institution; and thus contribute, by a small portion of their means, which they would never miss, and by their presence, if practicable, to keep rolling the ball of improvement, embracing every branch of industry, which they should resolve shall never cease moving but with the wheels of time. In the name of our fellow-citizens, we urge and welcome all North Carolina to the Fair; and more especially earnestly request all the members of the State Agricultural Society and the Judges who have been appointed to pass upon the articles offered for exhibition, to be certain and prompt in their attendance.

People in the most remote counties, East and West, should begin now to make their calculations and arrangements to come to the Fair in October, and bring some specimen, however small, of improvement and industry. These meetings are making the East and West acquainted with each other, uniting us as one people, identified in interest and destiny, and laboring in one great cause, the elevation of our own loved State in all its departments. This alone will doubly reward the trouble and expense of attending, and should stimulate the patriotic from one extremity to the other to exert themselves to come.

 Duplicate copies of the ARATOR have been sent to some of our patrons, not through mistake as some have supposed, but with the hope that they would circulate the extra numbers among their neighbors, and use their influence to get them to subscribe to the work. In one instance a name was entered inadvertently at the wrong post-office, but the mistake has been corrected.

IMPROVING SYSTEM AT PANOLA.

We invite special attention to the interesting communication of Jno. S. DANCY, Esq., in the present number, giving an account of the general system and spring operations, on his farm near Tarborough, called Panola. The amount of manure applied to his present crops, is astonishingly great, especially to those who have contented themselves to cultivate poor land, with poor returns, without troubling themselves to make or collect manure at all. It is well calculated to awaken all that class of do-nothing farmers; and we sincerely hope it will tend to arouse and stimulate our agriculturists all over the State to put forth their energies in the work of improvement. Let this communication be carefully preserved and compared with the result, which Mr. Dancy has promised to give in our December or January number.

For the Arator.

MR. EDITOR: Has it occurred to you that, you have not seen a "Mover" going West or South, for a long time?

What has stopped this "moving away"? What stopped the tide of travel that once moved along our roads, in long trains, of wagons, carts and carriages, carrying the intelligence, enterprise and wealth of our State to some Western or Southern State? Young, enterprising men, just come into the possession of estates their fathers toiled to make in N.-C. were accustomed to ask themselves, "What part of the West or South shall I go to?"

Again, I ask, who stopped this "Emigration"? I will give a simple and short answer, and then ask some of your correspondents to give their answers to the enquiry, "Who stopped emigration from North-Carolina"?—"The Agricultural Periodicals" is the answer I give. The answer suggests the many ways by which it has been accomplished; and I leave it to you to give it *in extenso*. I designed this short communication to call your attention particularly to one source of our wealth, that has been kept in N.-C. of late: The increase in slaves in N.-C. from 1830 to 1840, was only 2161. Would you believe it, but it is so reported in the Census, the increase from 1840 to 1850 is astonishingly great compared with the ten years previous to 1840. The slaves in N. C., in 1840, were 245,817; in 1850, they were 288,548; increase 42,731. This increase, of course, has been profitably employed. The increase in white population from 1830 to 1840, was 12,027, and the increase from 1840 to 1850 was 68,158. These facts speak for

themselves. Though the increase is small compared with some of the new States, yet for an old State it will compare favorably.

What do these facts suggest? Do they not call trumpet-tongued upon those who have the means and can think, that new sources of employment for this increase in population ought to be projected, and carried out? It is not enough to say we are increasing our means of getting to market by Rail-Roads, and opening Rivers when we haven't anything to carry to market. Start new sources of wealth, dig out something new or more of what we already raise from the soil; start Manufactories of all sorts; sell more than you buy; don't let the balance of trade be always against us; don't talk about hard times, and the Banks not discounting, the Banks can't do every thing for you, and you sending North for your negro shoes, hats, blankets, horse buckets, wheat cradles, cutting knives, plows and hoes, and in fact, every thing; never thinking that all these things can be made at home; never thinking that you are creating a balance against us, which is to be paid by the Banks in coin. My word for it, Mr. Editor, "times" in North-Carolina will *never* be *permanently* better, until we do something to stop this everlasting sending North for everything we use. In a recent trip from Wilmington to Raleigh, round by Weldon, I saw at the Depots along the road Northern hay, nicely baled up for sale, much of it in half a mile of as good meadow land as to be found anywhere, still in original, primitive grandeur.

I could write more, Mr. Editor, but am afraid your patience is exhausted; but, hoping I may induce some more competent hand to enlarge on the above facts and answer my enquiry, I send this paper; do with it as you like, burn it or print it, but I am for North-Carolina, asleep or awake, and "I take no step backwards."

MACON.

June 15th, 1855.

We take much pleasure in publishing the above communication. Our worthy and patriotic friend "Macon" may rest assured it will be read with pleasure and profit by every one who has a North-Carolina heart. It contains the right sort of matter for their consideration, brought home to their understanding and feelings in the right spirit; and we hope Macon will not let his able and impressive pen rest at this, but add more reflections "of the same sort," as they cannot fail to stimulate the enterprise of our intelligent readers, and tend to quicken agricultural improvement and hasten the introduction of new sources of wealth—lead to the

establishment of new manufactories and the enlargement and multiplication of those already existing in the State. We respectfully request some of our correspondents to answer the interrogatories of "Maeon."

ED. ARATOR.

WESTERN EXTENSION.

We are gratified to learn from the Salisbury papers that the right spirit prevails in that place on the subject of extending the railroad to the extreme West, "which will fill up the only remaining gap between Memphis, Tennessee, and our own seaports"—but a *step*, we may add, to be taken, to secure, and pour into Wilmi'g'tn and Beaufort, a vast amount of the trade of Tennessee, all the multiplied and multiplying products of our own rich and noble West—to draw through our central line an overflowing stream of travel from the South-West—to insure the rapid expansion and establishment of MARKET TOWNS in NORTH-CAROLINA—to achieve her COMMERCIAL INDEPENDENCE—and secure to our noble old State progressive prosperity, population, and opulence. The Whig and Advocate says town meetings will be held weekly until the stock of the road shall have been all subscribed and the company organized for active operations." Fifty thousand dollars will be subscribed, unconditionally before the meeting of the great convention in Statesville, on the 4th of July. As evidence of the good effect of rail-roads on real estate, the Whig adds "that before construction of the North-Carolina road, all of our Town (Salisbury) property was assessed, at a fair valuation at but \$150,000; whereas now the assessed valuation is \$450,000, which falls short of the real value.

GREAT FIELDS OF WHEAT.—The celebrated traveller and agricultural writer, Solon Robinson, (says the Fayetteville Observer,) a few years ago pronounced the farms of Messrs. Henry K. and Thomas Burgwin, on the Roanoke, in Halifax county, the best between Canada and Louisiana. We learn that the former has a field of 900 acres in wheat, which good judges estimate will yield 20 bushels to the acre, or 18,000 bushels in all, worth at present prices about \$50,000. It is said to be to be a most beautiful sight. Mr. Thos. Burgwin has a field of 700 acres in wheat, almost as good. These gentlemen make, besides, large quantities of corn, oats, &c. Their lands are in the highest state of cultivation, and have been liberally supplied with manures—so liberally, that when they commenced operations it was freely predicted in the neighborhood that they would break. Since that time the neighbors have learned to follow their good example.

GUANO.

Guano, or *huanu*, (pronounced by many scholars as if spelled *waru*) which signifies in the Peruvian or Quicha language "manure," is known to be the excrements of sea fowls. We gather from an extract from Brown's Field Book of Manures, which we find in the American Farmer, the following facts concerning this valuable fertilizer: For more than a century it has been used with advantage by the natives on the mainland adjacent to the islands where it is deposited. In 1806, a sample of it was first brought before the scientific world by Humboldt. Messrs. Fourcroy and Vauquelin, chemists of Paris, analyzed, and found it contained $\frac{1}{4}$ th of its weight in uric acid, partially saturated with ammonia, and small quantities of sulphate and muriate of potash, &c. From this test, its value became known in Europe and the United States. Mr. Skinner, then Editor of the American Farmer, first introduced it into this country in 1824; but it was not until 1840, that any considerable quantity was imported here or into England. At first it was used cautiously, from the fear that it would *impoverish* the *land*; but, as it produced great crops, and was found not to injure the soil, from 1840 to 1850, 650,000 tons were imported in that country. From its success in England, it was gradually introduced on this side of the water; and for the last few years, the demands for it, among the farmers along the Atlantic coast, where its value has been well tested, have greatly exceeded the supplies. It has been brought from Bolivia, Peru, Ichaboe on the coast of Africa, Patagonia, Chili, and the South Sea Islands; a great deal of which has been adulterated. In all climates subject to rains and heavy dews the guano exposed to their influence undergoes fermentation, loses a portion of its ammoniacal salts by the decomposition, and thereby is diminished in value.—The ammonia is generated by slow decomposition, and will escape into the atmosphere if the circumstances are not such as to confine it, and a dry climate is most favorable to its confinement. Guano varies in value according to age and climate.

The *Anagamous guano* contains a larger percentage of ammonia, with a due share of phosphates, than any other.

The *Peruvian* is considered the most reliable, but adulterations are confined to it almost exclusively. The pure article is a deep brown color, dry, strong smell, with little or no gritty matter. Purchasers should buy from dealers of known character, and from parcels that have been analyzed.

The *Bolivian guano* is next in value to the Peruvian.

The *Chilian guano* is of two qualities, one valueless; the other, from Valparaiso, quite hard, in large pale-yellowish masses, thought to be equal to Peruvian.

Ichaboe guano is nearly exhausted. It approaches in composition the Peruvian.

The *Patagonian guano*.—This variety is quite inferior, containing a considerable quantity of sand. *Saldanha-Bay guano*. This is similar to the Patagonian, coming from a climate subject to heavy rains, and its most fertilizing properties are its phosphates, which range higher than those in any other variety.

There are only two constituents which require taken into consideration in the estimate of the c

mercial value of a guano, and these are the *ammonia* and the *phosphates*. The alkaline salts are the only other constituents of any material value; and these are too small to deserve much consideration.

In these, the different varieties, according to analysis, stand in percentage as follows:

	<i>Ammonia</i>	<i>Phosphates.</i>
Anagamos,	20.58	19.50
Peruvian,	17.00	23.48
Bolivian	19.71	15.38
Chilian, fine,	18.80	11.96
Chilian, inferior,	2.11	16.44
Ichaboe, new,	10.42	19.63
Patagonian,	2.66	41.37
Saldanha-Bay,	1.62	56.40

Professor Way of England, has ascertained that the ammonia in a ton of Peruvian guano, at 6d a pound, costs \$42; phosphate of lime at 3 farthings a pound \$7.05, alkaliue salts, about \$5—making the value of the ton \$54, in these ingredients. So that the guano is the cheapest and best form in which they can be procured. Like barn yard manure, it is good for every thing. To make it effectual, the land must be in good tilth, and poor well tilled soils receive the greatest advantage from it, as they are generally deficient in what it supplies to the plant. When used broadcast, it is mixed with about one-fourth its weight in plaster, carefully sowed at the rate of 150 to 300 lbs. to the acre, and turned under with a dagon or turning plow rather deep.—If put in the hill, it should be composted with rich earth in such proportions as to give a half ounce to one ounce to the hill, with one-fourth its weight in plaster to half a gallon of the earth, *thoroughly mixed*, and spread so as to cover the bottom of the furrow thinly. This mixture should remain together in a dry place, (or be so put up if mixed as to turn the rain,) two or three weeks before it is used. It would be best to chop it in the earth a little where the corn it to be dropped; for there is danger, if the grain is put in immediate contact with the mixture, of the germ's being killed by the guano. Proper pains, however, will prevent this disaster, and be certainly rewarded at harvest.

Farmers, if they would thrive, must learn, like merchants, to be PARTICULAR, SYSTEMATIC, and ACCURATE in their business. Measure, weigh, put in well, leave every-thing nice, and keep strict account. Nature, too, should teach them this lesson. There are 55 different substances in nature, which are governed by certain and invariable laws. These never combine with each other, except in fixed and definite proportions; and by putting their equivalents together accurately, they never fail to form the compounds intended. What would be thought of the chemist or apothecary, who would attempt to form his compounds of medicine and other substances, by throwing his different elements together at random, or by guess? The farmer acts about as wisely, who carries on his affairs at random or by guess. Noth- ever fits, operates harmoniously, or turns out prosperously, under such a culpable want of system.

We are indebted to W. H. JONES, Esq. of this City, for a few grains of corn, which is said to mature in 40 days. We shall give it a trial, and report the result. We are also indebted to Capt. CAMERON, of Beaufort, for a small quantity of pro-

lific corn, which, it is said, will produce seven stalks to every grain, and a ear to each stalk, which we shall likewise give a fair trial.

CURE FOR SADDLE AND HARNESS GALDS.

We had the pleasure of taking by the hand recently in this City, our whole-souled brother of the corps editorial, Capt. CAMERON, Editor of the Beaufort Halcyon, who informed us that on returning from Mexico, at the close of the war, his horse's back became very sore, and that he cured it by the following very simple remedy: He had his saddle blanket so prepared as to prevent pressure on the sore, bathed it repeatedly with *Number Six*; and in travelling less than a hundred and fifty miles, the swelling abated entirely and the galded place soon healed over.

TO CORRESPONDENTS.

We regret that the valuable communication of "S. S. S." on the subject of Agricultural Schools, came too late for this number. It shall appear in our next, and we hope to hear from him again soon and often. We are thankful to our correspondents for the valuable contributions which enrich the pages of this number, from their pens, and earnestly request a continuation of their favors. And we again respectfully urge our farmers generally to give the public the benefit of their experience, through the medium of the Arator. They will be amply compensated for the trouble of writing short articles for the paper, by the benefits they will confer upon, and the hearty thanks of, the community.

We can't help envying our old friend of the Fayetteville Observer—(or it may be the ladies are remembering the Junior Editor)—for it seems the good people in that region are filling his basket with all sorts of fine fruit, among which was a twig of an apple tree from Mr. Makepeace, three feet long and about as thick as a lady's little finger, which bore seventy-one apples! This is mentioned as evidence of the abundance of fruit growing in that vicinity, and, we presume, every where.

FLOUR FROM NEW WHEAT.—The Fayetteville Observer states that two barrels of flour, from new wheat, raised by Nelson Harris, Esq. of Montgomery county, were sold in that market, on the 18th June, and passed as "Family Flour."

NEW USE FOR BEET ROOT. Among the many uses to which beet root can be applied, is that of making paste-board. A manufactory has just been established in Pontlin, in France.

NEWS ITEMS.

The pastoral letter of the Catholic Archbishop of Cincinnati, signed also by the Bishops of Cleveland, Louisville, Vincennes, and Covington, and the Vicar and Coadjutor of Michigan, recently issued, contains a strong clause against the evil of intemperance, advising the members of the Catholic Church to "discountenance and discontinue altogether the practice of retailing intoxicating drinks as a means of obtaining a livelihood."

It is estimated that the Agent to sell pure liquors, under the new liquor law of Massachusetts, who is to reside at Boston, and supply the State, at five per cent. on cost, will realize an annual profit of commissions, amounting to the enormous sum of \$40,000.

The prospect is for a continuation of the war, and increasing demand in Europe for our corn and wheat. The price of Wheat will probably, therefore, continue to advance, as all supplies from the Baltic, the Danube and rivers of the Black Sea, will be cut off, and its production must be greatly diminished in England by abstracting laborers from peaceful pursuits.

The Roanoke Herald, a very clever neutral paper just established at Williamston, by Mr. WILLIAM S. WARROCK, has an interesting editorial article, portraying the great fertility and value of the Roanoke lands. In addition to the immense wealth and high state of prosperity realized from its arable lands, which are proverbial for their abundant products, its juniper swamps have become sources of great profit from the shingle and lumber business, and such lands, which were considered twenty years ago valueless, now command ten to fifteen dollars per acre.

There was a mob and great excitement in Portland, Maine on the 2nd and 3rd June, about the liquor question. The Mayor had purchased \$1,600 worth of liquor for the city agency. The people turned out and clamored for its destruction. The military were called upon for aid, and fired into the mob, killing one or two and wounding others.

The Bank of the State of North-Carolina has declared a semi-annual dividend of $5\frac{1}{4}$ per cent.

A Model County.—The Greensborough (N. C.) Patriot states the remarkable fact that though one of the oldest counties in the State, there has never been a conviction for murder nor a person hanged within the limits of Randolph county.

There was a terrible earthquake in the island of Nippon, Japan, on the 23rd December last. The city of Ohosaca was completely laid waste. Jeddo

suffered much; and 200 lives were lost.—the inhabitants generally having saved themselves by flying to the mountains.

The Governor's House, or Palace, as it is called, was struck by lightning on Sunday evening, the 24th ult. Several windows were shattered, the wires and bells connected with them were melted, and other damages were done to the house; but, fortunately, no person was injured.

COTTON, at the latest dates, was still rising in the foreign markets, but without any corresponding rise in our home markets. The Picayune thinks the consumption of cotton is steadily encroaching on the growth, and that the first receipts of the new crop will command very high prices. It says the crop prospect thus far is very good, and is two or three weeks ahead of last season.

THE WAR.

There has been hard fighting at Sebastopol during the last month, and important advantages have been gained by the Allies; the tendency of which is to depress the grain and improve the cotton market.

THE GROWING CROPS.

At the time of writing this article, (15th of June,) we are cheered with favorable reports of the growing crops, from all quarters of the State. The prospect every where promises an abundant reward to the labors of the husbandman—news the more gratifying, since it insures a speedy relief to the poor, who are dependent on buying their provisions for the support of themselves and families. The Warrenton News thinks there will be more Wheat raised in Warren this year than was ever before produced in one harvest in the county; and although there will not be an average crop of oats on the uplands, on the low grounds finer oats were never seen growing. The corn crops look as well as could be desired, and the prospect for tobacco is very fair. Never were finer seasons for planting, and plants are more abundant than they were supposed to be. Take the crops of Warren altogether, the Editor never saw a brighter prospect than they at present exhibit. In this (Wake) county, tho' the wheat and oats have suffered from early drought, we believe the prospect promises an average crop, and if the season continues favorable more than an average of corn.

THE CROPS, in this vicinity, in this State, and every other quarter from which we have information, of every description, are unusually fine up to the last of June; and we have this cheering news from Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Kentucky, Mississippi, Michigan,

New-York, Ohio, Tennessee, Virginia, Wisconsin, Louisiana, as well as North-Carolina, where the wheat crop especially is coming in remarkably abundant. The rains continue to fall reasonably everywhere.

AMERICAN FARMER.

The June number of this valuable work, has been several weeks on our table. As usual, it is rich in useful and interesting matter to the farmer.

THE SOUTHERN PLANTER.

The June number of this valuable monthly agricultural journal, is accompanied with an extra containing the Premium list of the Virginia Agricultural Society, for their Fair in October next.—Liberal premiums are offered, among a great variety of things, for the best systems of improvement in lands and management of farms. This we regard as a very wise measure. It goes to the root of the matter. The Planter is full of interesting and instructive articles, as usual. Valuable extracts will be found in our paper.

GOWARDS' REAL ESTATE REGISTER.

This paper is printed at Boston, and being devoted to Real Estate, Agriculture, Architecture, the Arts, and General Intelligence, fills a department occupied by no other paper within our knowledge. It is conducted with much ability, is one of the most neatly printed papers in the Union, and is always filled with useful and interesting matter.

THE HILLSBOROUGH RECORDER.

This old and well edited Journal, (one of the papers of the State which has honored us with an exchange,) has been greatly enlarged and otherwise improved. We are gratified at this evidence of prosperity on account of the inestimable private virtues of both the venerable father and worthy son, by whom the paper is conducted.

NEW ENGLAND FARMER.

We have received the June number of this excellent work. It collects all that is good in the Yankee land, and our people might gain much instruction from its pages.

THE AMERICAN AGRICULTURIST.

This valuable agricultural paper comes to us weekly, in a beautiful dress, and filled with instructive and encouraging matter to the improving farmer.

What has become of the Fayetteville Argus? We had flattered ourself with the pleasure of an exchange.

SCATTER YE SEEDS.

Scatter ye seeds, and flowers will spring;
Strew them at broadcast o'er hill and glen;
Sow in your garden, and time will bring
Bright flowers, with seeds to scatter again.

Scatter ye seeds—nor think them lost,
Though they fall amid leaves and are buried in earth;
Spring will awake them, though heedlessly tossed,
And to beautiful flowers those seeds will give birth.

Scatter ye seeds; tire not, but toil;
'Tis the work of life, 'tis the labor of man;
In the head, in the heart, and on earth's own soil,
Sow, gather and sow, through life's own span.

Scatter ye seeds in the field of mind—
Seeds of flowers, with seeds of grain;
In the spring and summer, sweet garlands ye'll find,
And in autumn ye'll reap rich fruits for your pain.

Scatter ye seeds in the garden of heart,
Seeds of affection, of truth, and of love;
Cultivate carefully each hidden part,
And thy flowers will be seen by angels above.

Scatter ye seeds—the seeds of Hope:
Plant in your bosom the Tree of Life—
Then the flowers here budding in Heaven shall open
And in Heaven will ripen the fruits of strife.

Then scatter ye seeds each passing year;
Sow amid winds and storms of rain—
Hope give thee courage, Faith cast out fear,
God will requite thee with infinite gain.

HOW TO RAISE WATERMELONS.

First and foremost, be sure you have good seed. The best soil is, unquestionably, a sandy one. The surest way of manuring is by cow-penning. But a thick coat, broad cast, and well plowed in, will do. Lay of the ground ten feet each way. Right in every cross dig a hole, 18 inches square, Fill these holes with soil and manure well mixed to a little rise above the ground. And then put your seed in these hills. Let the hills, or beds, be thinned out early, leaving not more than two plants in a place. Tend your patch well with the hoe until your vines are 18 inches or perhaps 2 feet in length. Then plow carefully with a turning plow, so as to make your ground higher at the hills. Leave a deep furrow in the middle, so that as little water as possible may stand in your patch after a big rain.—This cause, more than almost any other, ruins water melon vines. It makes them turn yellow and fail directly. After this plowing, use nothing but a hoe. Keep your patch clean all the time. If you wish large mellons, when you find some two or three healthy ones to one vine, cut off the top and all the suckers or scions that may come; and you will hardly be disappointed in fruit of the finest quality.—Edgefield Advertiser.

For the Arator.

Swansboro, N.-C. June 25, 1855.

EDITOR OF "ARATOR." *Dear Sir:* Believing your readers would at all times, be glad to know every thing pertaining to the improvement of soils; and knowing that the grass known as nut grass is the greatest enemy to our soils, I thought I would impart to them information as to how it may be utterly destroyed at a small expense: It can be done by confining geese upon it for one season.—Let the number of geese be so proportioned to the amount of land fenced in, that there will be barely sufficient grass for their sustenance. Nothing else is required but to keep water by them.

Yours,

H. A. D.

Quere.—Would not repeatedly shaving the top of the grass, with a sharp instrument—hoe or seraping plow made for the purpose—do the work as well and in less time, provided it be shaved as close as a goose can pick it?

NOVELTY IRON WORKS.

With unaffected pleasure and earnestness, we call the attention of the whole State to the advertisement of the Novelty Iron Works, in this City, which will be found in page 127 of this number of the Arator. It will be seen that the State can now be furnished, at home, with all kinds of Iron and Brass Castings, (Agricultural Implements included,) cheaper and better than they can be procured from abroad—a great and important branch of business, which we have long urged and desired to see established among us. We hope every citizen will direct his patronage to this establishment.

HOW TO RAISE CUCUMBERS.

Saw a common sized barrel in half, and put one of the parts, small end downward into the ground, leaving the top of the half barrel even with the surface. Fill with dirt four inches deep. Then make a rough box (not water tight, five inches square, with one end nailed up but not so as to hold water. Place the box with the headed end at the bottom, in the center of the barrel, and then fill the barrel all around it up to the surface of the ground with rich loam, or the washings of a bottom, and well rotted manure. The box should stand several inches above the surface, as the design of it is to receive dirty water, soap suds, &c., to nourish the plants around it in dry seasons. Plant your seed, say four hills in the barrel around the box. Thin to one plant in a place. Stir the earth well till the vines begin to run. & then, if you like, make a frame for them to run. The more they shade each other the better. Cucumber vines, thus raised, will bear until frost and bear abundantly.

USEFUL RECIPES.

TO PRESERVE SMOKED MEAT.—How often are we disappointed in our hopes of having sweet hams during the summer? After carefully curing and smoking, and when sewing them up in bags, and whitewashing them, we find that either the fly has commenced a family in our hams, or that the choice parts round the bone are tainted, and the whole spoiled.

Now, this can be easily avoided by packing them in pulverized charcoal. No matter how hot the weather, nor how thick the flies, hams will keep as sweet as when put up for years. The preservative quality of charcoal will keep them till charcoal itself decays.

Butter, too, put in a clean crock, and surrounded by pulverized charcoal, will never become rancid. Try it.

HOW TO CURE HAMS.—When the ham is salted, place the shank down, and always keep it in the same position while salting and smoking. By this method the juices, or moisture of the flesh are retained. Hams so cured are much better and moister and will keep any reasonable length of time. J. B.

VEGETABLE SEASONERS.—Parsley, celery, thyme, sage, onions, garlic and other seasoners, should not be put into soups or stews until the soup is nearly done; chop fine, and put in five minutes before the soup is taken from the fire.

COAL ASHES.—The best purpose to which coal ashes can be applied, in town or country, is in making garden walks. If well laid down no weeds or grass will grow, and by use they become as solid and more durable than bricks.

TO PRESERVE DEAD GAME.—Take out the intestines, and fill the inside with unground wheat, and place the fowl in a heap or cask of the same grain in such a manner as to insure its being completely covered. In this way, fowls may be preserved perfectly sweet for months. The feathers should be removed.

TO MAKE TOUGH BEEF TENDER.—To those who have worn down their teeth masticating poor old tough cow beef, we will say that carbonate of soda will be found a remedy for the evil. Cut your steaks the day before using, slices about two inches thick, rub them over with a small quantity of soda, wash off next morning, cut into suitable thickness, and cook to notion. The same process will answer for fowls, legs of mutton, etc. Try it all who love delicious tender dishes of meat.

Boston Cultivator.

REMEDY FOR THE CRAMP.—Those who may be subject in the night time to that excruciating pain called cramp, may be secure against its attacks by tying any kind of a bandage very tightly around the leg, immediately above the knee; or it may be remedied by breathing forcibly, and taking long respirations, thus exciting the action of the lungs, by which means the whole system will be animated, and perhaps in less than a minute the disorder will be abated and the pain effectually removed.

QUINCES.—Bake them, remove the skin, slice and serve with cream and sugar. Prepared in this manner, many prefer them to the peach. If you have never eaten them prepared in this way, try it, by all means, and you will thank us for the suggestion." So says the *Farmer's Mirror*.

The Quince is an elegant fruit and we hope to see it more common. Made into a sauce with sweet apples, in the proportion of three fourths of the latter, with half a pound of sugar to the Quinces, and none in the apples. A cheap article produced for the dinner or even tea table, which is not to be despised.—*Prairie Farmer*.

METHOD OF DETECTING COTTON IN LINEN.—The oil test is a good one and convenient in execution: when flaxen fibres are rubbed with olive oil, they appear transparent, like oiled paper: while cotton under similar circumstances remains white and opaque. Dyed goods exhibit the same if previously bleached by chloride of lime. It is well to employ several tests—the microscopic oil, sulphuric acid and combustion, although the one just given may be relied upon.—*Real Estate Register*.

MANUFACTORY OF PAPER.

The New York *Sun* says that a company is soon to be formed in that city for the manufacture of paper from saw-dust and shavings, from which it has been found, by experiment, that the most beautiful paper may be made. It is estimated that saw-dust can be purchased for \$5 per ton: and that the process through which it will go in the production of paper will materially lessen the price of the latter. The saw-dust is reduced to pulp, in the process of its manufacture, by acids, and afterwards passed through an operation similar to that through which the paper in use is subjected in its preparation. From the saw-dust turpentine is extracted in quantities sufficient to make it an object of labor, and the acid used in reducing the saw-dust to pulp is purified into its original strength, with loss only of about ten per cent.

A RICH JOKE.

A gentleman in this place, played off a rich joke on his better, half the other day. Being something of an epicure, he took it into his head, that he would like to have a first rate dinner.—So he addressed her a note politely informing her that a gentleman of her acquaintance—an old and true friend, would dine with her that day. As soon as she received it, all hands went to work to get every thing in order. Precisely at 12 o'clock she was prepared to receive her guest. The house was as clean as a new pin—a sumptuous dinner was on the table, and she was arrayed in her best attire. A gentle knock was heard and she started with a palpitating heart to the door. She thought it must be an old friend from—perhaps a brother, from the place they once moved. On opening the door she saw her husband with a smiling countenance.

'Why my dear,' says she in an anxious tone, where is the gentleman you spoke of in your note?

'Why said her husband complacently, here he is.'

'You said a gentleman of my acquaintance, an old and true friend, would dine with us today.'

'Well,' said he good humoredly, 'am I not a gentleman of your acquaintance, an old and true friend?'

'Oh!' said she distressingly, 'is there nobody but you?'

'No.'

'Well, I declare this is too bad,' said his wife in and angry tone.

The husband laughed immoderately. His better half said she felt like giving him a tongue lashing—but finally they sat down cozily together, and for one time he had a good dinner without having company.

A physician in large practice, was asked a few days since, if New York was healthy. He replied—"Unusually so; the extravagant cost of provisions has checked the disposition for overfeeding, from which ordinarily, we derive most of our practice!"

FEMALE MEDICAL COLLEGE.

The sixth Annual announcement of this Institution, located in Philadelphia, is before us. At the last commencement, there were six graduates.—There are at present, thirty-five "matriculants," among whom, we see the name of Lucy M. Petersilia of Raleigh, N. C. and Orie R. Moon, of Albemarle Co., Virginia.—N. C. Native Sentinel.

From the Journal of Commerce.
A RAT! A RAT!!

Messrs Editors,—Having heard that a belled rat would drive all other rats away, I tried the experiment a few weeks since by procuring a fine sized one and putting a sleigh bell around his neck. Since then, his troublesome fellows, of whom there were a great many before, have all disappeared leaving to him an undisputed monopoly of their former haunts. The tinklings of his bell, a noise uncongenial to his naturally stealthy instincts, are now the only companions of the solitary and errant life to which he is doomed.

A GREAT FARMER.

Probably the largest farmer in America is a large elephant which is engaged at ploughing up the farm of P. T. Barnum, near Bridgeport, Conn. Passengers who came by the New York and New Haven Railroad yesterday, state that they had a fine view of his "Elephantine Highness, as they passed the farm in question. He is said to be very docile, walks three times as fast as a pair of horses, and drags a large subsoil plough, driving it from 16 to 21 inches deep. This same animal was used in India to work on the roads, pile timber, &c.

A French chemist M. Laysel has discovered that by grinding Tea like coffee before infusion, the amount of exhilarating matter obtained is nearly double.

The following is one of the toasts given at the celebration of the 4th of July, out West: "American Youth—may their ambition reach as high as their standing collars."

ELECTRIC TELEGRAPHING WITHOUT WIRES.

Among the most startling wonders in connexion with electricity is the announcement that Mr. Bonelli, of Turin, has invented a new electric telegraph, by which trains in motion on a railway are enabled to communicate with each other at all rates of velocity, and at the same time with the telegraphic stations on the line, while the latter are at the same time able to communicate with the train. It is added, that M. Bonelli is in possession of a system of telegraphing communication by which wires are entirely dispensed with.

AUCTIONS IN HOLLAND.—It is an invariable practice, throughout Holland to bid down in stead of up at auction. An article is set up by the auctioneer, at any price he chooses; if no one bids, he lowers till some person calls "mine," and that person who so claims it, is then entitled to it.

MARKETS.

RALEIGH.—Corn, 1,00 @ 1,05; Bacon Hams, 14 @ 15; Hoground, 12 @ 12½; Flour, \$ 9 @ 10 per load; Meal \$1,10 @ \$1,15; Fodder, \$1 25 @ \$1 50; Oats, clean, 55 @ 60; Butter, 23; Lard, 12 @ 13. Flour is in demand, and would meet with ready sale.

FAYETTEVILLE.—Corn, 1¼ @ \$1 50; Bacon, 11 @ 12½; Cotton, 9¾ @ 11; Flour 10 @ 10.

WILMINGTON.—Bacon, 13; Cotton, 10 @ 11¾; Turpentine, yellow dip, \$2 35, Hard, \$1 75; Spirits, 39c.

PETERSBURG.—Bacon, western sides and shoulders, 9 @ 10¾; Cotton, 11 @ 12; Corn, 1,10 @ 1,11; Flour, 11 @ 14*; Tobacco, lugs, 5½ @ 7½; leaf, 7½ @ 12½; Wheat, \$0 00 @ \$0 00; Mexican Guano, \$35; Peruvian ditto, \$50.

NORFOLK.—Bacon, hams, 12 @ 13, hog round 11½ @ 11½; Cotton 11 @ 11¾; Flour, 11¼ @ 12½; Spirits Turpentine, 40 @ 41.

* This quality Flour is manufactured at the city mills, and is considered a very superior quality of Family Flour, which accounts for its extra high price. The prices are regulated by the grades "midling," "fine," "superfine," "extra," and "family flour." It is a rare thing that any, except "city mill" flour, ever reaches the grade of best "family."

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4—tf

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

no. 2—tf.

W. L. POMEROY,
PUBLISHER,
BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
 Theological, Law, Medical, Classical,
 Miscellaneous

AND
SCHOOL BOOKS,
 AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every
 purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

Office of the Neuse Manufacturing Co., }
 RALEIGH, N. C. }

H. W. HUSTED, Pres't; E. B. FREEMAN, Treasurer.

THIS COMPANY will pay CASH for all Cot-
 ton and Linen **RAGS** delivered at their Paper
 Mills at MILBURNIE, six miles N. E. from Raleigh.
 The Planters of the country are urged to have the
 Rags, now wasting on their plantations, saved and
 sold. It will add much to the comforts of their
 slaves; and will cost but little care. ~~13~~ We want
 700,000 lbs. per annum. 1-tf.

WILLIAMS & HAYWOOD,
RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
 Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
 French, English and American Perfumery,
 Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
 Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
 Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
 terms, and offer goods equally as low as they can be
 obtained from any similar establishment in this sec-
 tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
 faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
 attention at all hours of the day and night.

1-tf.

E. L. HARDING.
Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of
SPRING AND SUMMER CLOTHING, with a
 well selected stock of Gents. **FURNISHING ARTI-
 CLES.** Our facilities for *buying cheap*, and having
 our goods *made up* under our own eye, makes it an
 object for those in want to call and examine our
 stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2t



"ADAMS EXPRESS COMPANY."

MERCHANTS and others having Goods to ship,
 will find it greatly to their advantage to con-
 sign them to the care of this Company. The well
 known responsibility of the Company is a sufficient
 guarantee against all losses. Having obtained un-
 limited privileges over all roads connecting this
 with the Northern Cities, patrons may rest assured
 of having their Goods transported at mail speed.

Notes, Bills, Drafts, etc., etc. collected, and re-
 mittances promptly made at all places where the
 Company has Agencies.

J. B. EZELL, Agent,
 Raleigh.

Office FAYETTEVILLE ST.

TABLE OF CONTENTS.

Arator, duplicate	ply of,	111
copies,	Milch Cows. man-	
Blackberry Jam,	agement of,	109
Beets, new use for	News Items,	123
Brown Bread	Novelty Iron Works,	125
Coal Ashes,	Nut Grass, to de-	
Corn, Drilling,	stroy,	125
Do for soiling and	Oats, how do they	
hay,	injure, &c.	113
Do, matures in 40	Panola Improve-	
days,	ment,	112 120
Double Harness	Peas as prepara-	
Safety Strap,	tion for Wheat,	103
Correspondents,	Pea Weevils.	102
Cotton,	Potatoe, Sweet,	115
Crops,	Plows and Plowing,	103
Ear-Ache, to cure,	Plowing, steam,	111 102
Emigration, how	Potatoes, boiling,	102
stopped,	Pork, raise your	
Exchange Papers,	own,	115
notice of,	Poultry Yard,	108
Elephant plowing,	Potatoes, putting up,	115
Flour from new	Prices Current,	127
Wheat,	Raining Tree,	105
Flowers,	Recipes, useful,	125
Fruit, a word about,	Rat! Rat!	127
presented to	Sanatory Substan-	
Eds. Observer,	ces,	111
Galds, cure for	Shirt Bosoms, to	
Garden, value of	do up,	111
do the Kitchen,	Small Grain, what	
Guano,	objection to sow-	
Hill-side Ditching,	ing,	113
Horse, vicious to	Sugar, cheap for	
subdue,	food,	102
How to raise Cu-	Scatter your Seeds,	124
cumbers,	Tomato Catsup,	114
Lightning Conduc-	Turkeys, Breeding,	110
tors, facts con-	Toast out West,	127
cerning,	Telegraph without	
Manures, Nascent,	wires,	127
Manuring, any sys-	Weevil, to head,	101-114
tem better than	Wheat, great yield	
none,	of,	122
Medicine, good sup-	Western Extension,	122

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, AUGUST, 1855.

NO. V.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, in advance or \$1,50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

From Transactions of the N. Y. S. Ag. Society, 1855.—Agricultural Meeting, Feb. 8.

BREEDING CATTLE FOR FATTENING.

MR. WOOLWORTH IN THE CHAIR.

Mr. Johnson, Secretary of the Society, remarked that he would call the attention of the meeting to some of the most noted breeds of cattle in Great Britain that are fattened for markets. He trusted there would be gentlemen present who would be enabled to give all the necessary details of the process pursued in our own State in preparing cattle for the market. The description of cattle here given is mainly from Dickson's work on breeding live stock, published in Edinburgh in 1851.

Among the breeds which stand high in the English markets at Smithfield, the *West Highland cattle* from Scotland are among the first in quality and price of beef. This is one of the oldest breeds, and is yet preserved in its purity in the Isle of Sky and other western islands, and in the north of Scotland. Their hides are thick, but mellow in handling; the forehead broad, with tuft in center: fine muzzle, wide nostrils, bright and daring eyes, beautiful long turned up white horns with black tips, and manes like horses. They are remarka-

ble for symmetry. The grain of the *West Highland beef* is very fine, perhaps excelling any other. They are taken to England, and fatten readily on the fine pastures in Norfolk, where they are most prevalent, and their meat finds its way to the private tables of noblemen and gentlemen. I should like to see these cattle introduced into this country, believing that a cross upon our native cattle at the north, where our winters are severe, would give us a very excellent animal that would withstand our severe winters, and furnish most excellent beef. We understand some of these cattle were imported into Canada in 1852 and '53. A gentleman from western Virginia, who was in England in 1851, and who thought the cattle in his vicinity could not be excelled, went with me to Smithfield market. The black cattle were there in great force, and of remarkably fine quality; he said, "I give it up. This is superior to anything I ever saw."

Another Scotch breed, the *Galloway*, natives of the county from which their name is derived, are a very old breed, and bear a very high reputation in market, and are considered very nearly equal to the *West Highlanders*; and it is doubtful whether, being in equal condition, a *Galloway* or *West Highlander* will bring the highest price per stone in Smithfield market. This breed is hornless, and the color black, and for symmetry a first class *Galloway* can hardly be excelled. They have fine coats of hair, and thick and mellow in handling. In form they are round and barrel like with wide backs, full loins and rumps. The crops

are also full, and have little coarse beef; bone fine and flat, head well set on and rather fine, eyes prominent, muzzle fine, ears rather rough, and a tuft of hair on the brow, while some of them have manes. They have long been prized by the English graziers, particularly in Norfolk.

These cattle, as well as the West Highlanders, are generally kept until they are three years old before they are sold to the graziers, half fat, or what is termed fresh condition. The heifers of this breed, when fattened, are perfect models of symmetry. Mr. Colman, in his tour in England, remarked: "I think of this breed, that one of these animals having the head taken off would leave a perfect parallelogram, so perfect is the symmetry. This breed would be a great acquisition to our country for particular localities, and some liberal friend of the farmer could do good service by introducing them among us." There are some other hornless breeds in Scotland, but are not generally esteemed equal to the Galloway.

Of the English breed of cattle, the *Short-horns*, *Devons*, and *Herefords* are the principal breeds of cattle for market. Of these the *Short-horns*—of which we have some as fine specimens in this country as can be found in Great Britain—are the leading breed, there being a much larger number of this breed and crosses from it than from all the others, fattened for market.—They are yearly extending into new districts, and wherever the climate and feed are suited to them they become favorites as soon as introduced. This breed is superior in its early maturity and great aptitude to fatten and for its symmetry and points of excellence and are fed to great weight at an early age. Stock of this breed often arrive at maturity at two years old and are fit for the butcher. Their handling qualities are the finest imaginable showing their aptitude to fatten readily, and this quality is indispensable for fattening animals in order to render them profitable. They are appreciated in this country, and the fine stock which is constantly passing through our city to our great emporium, to supply the weekly demands, from Ohio, Indiana, Kentucky and Illinois, shows the extent to which this valuable breed has been introduced, the best of these droves being *Short horns* and their crosses. Our breeders have learnt that an animal that will mature in two and two and a half and three years and give weight equal to a five year-old native, is the animal best suited to them. And when the pastures are rich and luxuriant, and the winters not too severe there is no breed that will pay as well as this.

An English butcher, in reference to this breed, says: "They are a large size at early maturity. In England the cows and heifers are worth more than any other kind for the milk-man, in the metropolis, and large towns. The best Durham oxen

have thick, wide, fat backs, with a handsome frame and plenty of lean flesh, with heavy thighs, and generally, when made fat, weigh well at the weights they are laid at; they are longer than the generality of *Devons* and *Herefords*, and a great many *Short-horns* are as large and as fat at three years old as the *Devons* and *Herefords* at four. They carry plenty of tallow according to age, and the best of them have a fine silky grain, with marbled flesh. I find no beast comes to the scales better, with the exception of the thick set, lean-fleshed, short-legged, polled Scots. I consider the *Durham* cattle, take them all in all, the best breed for the farmer, or best breed for profit. When I speak of *Durham* I do not mean the coarse *Short-horns*."

The *Hereford* breed. This is a very valuable breed, and may be classed next to the *Short-horns*, although the *Hereford* breeders in England contend that they are superior to the *Short-horns*.—They are generally very fine mellow handlers, and soft mellow hides and close soft hair. But it is generally admitted in England, certainly so far as we could obtain information, that they do not arrive at maturity as early as the *Short-horns*, or feed to the same weights. This breed has been introduced into our State, and has given very manifest satisfaction. The beef of the *Herefords* is very fine, and commands, next to the black cattle, the highest prices at Smithfield.

The *Devons* are a favorite breed in England, and give remarkably fine beef, equal to the best *Herefords*. Many of the *Devon* breeders claim that they can make as much money upon them as can be made from the *Short-horns* or *Herefords*.—They have been introduced very extensively into this country, and for beef, milk, and the yoke, are a very popular breed, and have probably been the means of improving the cattle in the Eastern States more than any other. They are very hardy, fat easily, though not as early as the *Short-horns*.—They are to be found in all parts of our country, and are a most valued breed, and will continue here as in England to have their friends for their very admirable qualities. Where the winter is severe and the food not the most luxuriant, I think this breed can hardly be excelled. These are the principal English breeds which I think important to be introduced here.

Among what are termed *native cattle* at the North, the best I think are the *New England* red cattle, and my impression is that they were derived originally from the *Sussex* cattle in England. This breed, though "said to be a variety of the *Devon*", is evidently a distinct race; for although similar

in color, these animals stand higher on their legs, and their bones and hides are not so fine; they are on the whole a coarser and heavier breed than the Devons, and get to greater weights." This description, I think, is applicable to the New England cattle, and upon these a cross of the Short-horns, Herefords or Devons will produce a fine animal for markets, securing earlier maturity and heavier weights with the Short-horns and Herefords.

It cannot be doubted that to make the feeding of cattle profitable in this State we must secure the breeds that will fatten at the earliest age and at the least expense, and to do this we must have animals of fine handling qualities, which are appreciated by every intelligent feeder, and the tough-hided cattle are rejected by our best graziers.

The quality of pasture best suit to feeding is a very important matter, after you have secured the animal you need; and here I would refer to the hon. gentleman from Steuben, Senator A. B. Dickinson, who has had much experience in that subject, and who is entirely familiar with the soil and grasses best adapted to this object.

As an evidence of the value of Short-horn cross upon our native cattle, I would remark that during the past season I was in company with two young farmers of Dutchess county, one of whom had purchased a drove of grade Short horns for feeding for the New-York market. A neighbor purchased, at the same time about an equal number of the common cattle of the country, averaging from one to two years older than the first. The first lot cost from \$5 to \$10 per head the most. They were fed and driven to the New-York market, the former realizing from \$15 to \$20 per head more than the other. It can be seen from this statement which was the gainer.

As to stall feeding, it is a question, I think, whether it can be pursued in this State, at present at least, with profit. We have Indian meal and oil cake, which are valuable for the purpose, but we do not as yet feel the need of manure so as to make that, as in England, an item in the calculation of profit. The time will come, however, when we shall be led to look at this matter in a different point of view. The English feeder calculates if he can secure the cost of his animal he does well, the manure enriching his land for the crops that are to fatten others, and often even he is satisfied when he does not fully meet the cost of preparing the animal for market. Our farmers have not the facilities for securing their manure that

they have in England, neither do they, with like care, apply it as it should be.

I will here give the substance of a prize essay on fattening cattle by George Dobits, in the Royal Agricultural Society's Journal, containing, as it does, many very valuable suggestions as to the selection and care of animals:

"The first point," he says, "is to have a good sort of bullock to begin upon, not to recommend," he says "any particular breed to the depreciation of all others, because different localities require different descriptions of animals; but to caution breeders that it is right to select the characteristic marks of the breed they intend purchasing, to warn them particularly never to purchase a coarse, ill-made, bad-bred animal, because they may fancy it cheap. A man has never got so bad a bargain as when he has, as the saying is 'got too much for money'.

"The first criterion for judging of the disposition of the beast to fatten quickly, in my opinion, is that peculiar, soft, supple feel of the skin which is commonly called handling well. This is generally accompanied by hair of a soft, fine quality, in great plenty. The eyes should be full and clear, and the head well formed; the shoulders not upright but lying well back; the chest full; the ribs deep, and well arched out; the flanks well down; the hips nearly level with the back bone, and in proportion to the rest of the carcass as to width; the rumps wide, and not too low down, appearing as if, when fat, the tail and rump ends would be level (but this the butchers are in the habit of calling the fool's point); the purse should be of full size and soft to the touch (this I consider a material point), the twist good, and the legs short and small in proportion to the carcass, as the ossal will be light in proportion to the leg bone.

"Next observe the temper of the animal; in selecting from a considerable drove you will often find beasts possessing many of these good points, yet in a lower condition than some of the animals of a worse appearance. Consider well whether this may not arise from the masterful disposition of the ill made one, and whether, when put to fatten where every beast may eat his share of food without disturbance, the good bred one will not soon surpass his more masterful neighbor. If you observe a beast that is constantly watching an opportunity of goring any other that comes in his way, leave him behind, even if he is much heavier than those you select; he may be a great trouble to you; and although the jobber may think you have selected them badly, he will sell them according to what they are worth at the time, and the present weight is the great point with him. For this reason always select the animals

before purchasing, rather than agree to give a certain price per head to pick where you like from the drove."

"I think the quality of an animal is of more consequence than his form for common fattening purposes, but have both good if you can. But if you are thinking of fattening an animal to show for a prize, be sure to have his form as perfect as possible, for all the flesh you may lay on him will not hide any great defect in his form; also ascertain if possible how the animal is descended; ten to one but the progeny becomes similar to the progenitor. But this is generally a most unprofitable affair, and I strongly recommend all young farmers to leave it in the hands of those gentry who can afford the loss, many of whom there are in the country, and they deserve our best thanks for their patriotism, for it certainly shows the capabilities of different breeds, and thereby enables the observing farmer to profit by the experience of others. Never buy any animals that are excessively poor; they will consume a great deal of food before they are got into health enough to fatten, for, depend upon it, unless your animals are well bought, fattening cattle will never pay enough to *leave the manure clear profit*, which it ought to do, although I fear with the majority of farmers it is far otherwise."

"*Summer Grazing.*—I shall say but little with respect to summer grazing, as the wording of the Society's advertisement appears to apply more particularly to winter fattening; merely remarking that the fences should always be kept thoroughly good, a weak place being strengthened before it becomes a gap—prevention, in this case, like many others, being better than cure; that the bullocks should be well supplied with water, and have plenty of shade; never allow them to be frightened by dogs, &c.; treat them kindly, and they will soon cease to fear your presence; do not let a day pass, if you can help it, without seeing them.—There is an old saying which ought to be impressed on every farmer's memory—it has been of great service to me in the course of my life—it is: "The master's eye grazeth the ox." A friend of mine has lately adopted a plan, which, under the same circumstances, I should strongly recommend—it is that of giving a small quantity of oil cake to animals grazing, for the sake of improving an ordinary pasture, and its effects are astonishing. The pastures I allude to are small, and one or two bullocks more than they are calculated to carry are put into each; the lots are then allowed 4 lbs. of cake per day per head; this, at a cost of about

two shillings per head per week, which I believe the stock well paid for, has entirely altered the face of pastures from what they were three years ago, when the plan was first adopted by him, and I believe without any loss to himself."

"*Winter Feeding.*—I now come to the point of winter feeding. *First*, as to the places in which they are kept, I unhesitatingly give my opinion in favor of stall feeding, for all the common purposes of grazing, but not for young beasts that are to be summered again, or for prize oxen; the former should have small well sheltered yards, with good sheds—if the fences are so high that they cannot see over, it is much the better; and the latter, loose boxes, with plenty of room for them to walk about, because they have to be kept up for such a long period, that, if no exercise were taken, the health might suffer. It is the abuse of stall feeding that has got it into disrepute with some people, and not treading down straw enough with others. This last I hold to be an advantage; for, depend upon it, it is not the size of the dunghill, but the quality of the manure that causes the farmer's stack yard to be well filled. If managed well, I contend that there is no plan so good as stall feeding. The fattening house may be of any size or shape, but it is necessary that there should be underground drains, with gratings, to carry off the urine into the liquid-manure tank; shutters behind the bullocks, to regulate the heat, and a wide passage at their heads to feed them and clean their mangers. The advantages I conceive to be the quantity of litter required being smaller, therefore the muck being made better—the temperature being more easily regulated, and every bullock being allowed to eat his share in peace. The disadvantage of the animal not being able to rub himself as well, I consider fully done away with by the rough brush which you will observe I recommend using, and although theorists may fancy the health of the animal likely to suffer, I have never found it so in practice."

"Now with respect to their food, so much does this vary (from the plan pursued by some people with an ox intended to be shown at Smithfield, in a class restricted from corn, cake, pulse, &c., &c., which has the cream of several cows given him by way of compensation, to that by the man who endeavors to fatten his animals on turnips and barley straw,) that it would take up far too much of the Society's valuable journal even to enumerate them. I shall, therefore, simply give the plan I recommend, leaving my readers to follow it

if they like, and improve upon it whenever they can:"

"I think in many instances stall feeding is not commenced early enough in the autumn. As soon as the weather becomes damp, and the days shorten much, say some time in October, the grass in my neighborhood loses its feeding properties, and then the sooner your bullocks are put up the better. For this purpose, I recommend having some of the large forward descriptions of turnips provided, perhaps the "red tankard," although watery, and soon becoming of little value, are at this very early season the best of any, from their early maturity; these are sown in April, at the rate of an acre to every eight bullocks, which will last them three or four weeks, according to the crop, and leave a light fold to begin the sheep upon; at the end of which time the forward Swedes are ready to begin. During this period I give them little or no oil cake, if they are only in moderate condition; but they have half a stone of pollard a day, mixed with an equal quantity of hay or straw chaff. Some persons may fancy this food is of too loosening a nature, but I can assure them from several years' experience, that although pollard is loosening itself, yet it has the effect of preventing the watery white turnip from purging too much. Although the bullocks do not gain much in weight during this time, yet I am satisfied they go on faster afterwards—the reason of which is, I suspect, that their bodies are more prepared for the artificial state they have to live in for the next few months. Early in November the food must be changed to swedes, cake, &c., the quantities of each must vary according to circumstances; the following I consider a good allowance where swedes are not scarce, if they are, more oil cake must be given instead of a part of them, or if very plentiful, they may be allowed even more: The morning's bait, one bushel of swedes, well cleaned from dirt and cut small, given a few at a time—then, the refuse pieces being well cleaned out, a dry bait consisting of 2 lbs. of oil cake, 3 lbs. of pollard and a little hay chaff. While they are feeding, the manure and wet litter must be well cleared away, and any which may be on the bullocks taken off, the floor swept clean, and plenty of fresh litter put in; then have every bullock well brushed with a dandy brush—being a brush made with whalebone, for taking the rough dirt off of horses. (Let no farmer fancy this to be a whim of mine; depend upon it, the bullocks are kept in much better health and greater comfort for it.)—They must now be left quiet; they will soon lie

down and rest, and chew the cud till after dinner, when another bushel of swedes is given as before, in small quantities, followed by a similar dry bait of cake, pollard and hay chaff, but with the addition of 3 lbs. of bean meal—this is left with them at night. Be careful that the shutters are opened or closed, according to the weather, so as to maintain an even, warm temperature—but not hot enough to make them perspire, if it can be avoided. Be also careful that the mangers are well cleaned out between every bait. I have mine cleaned at the commencement of the season, and as often afterwards as I think necessary, with scalding water and the scrubbing brush."

"After a month or so the cake may be increased, and, if it is thought more convenient, the swedes may be changed for mangold wurzel.—Many persons object to using mangold until the spring; they certainly are more valuable than swedes in the spring, and, therefore, should always be used last. Never change from mangold wurzel to swedes, after you have once began them, or the bullocks will not go on so fast; but if, from having a bad crop of swedes, or for any other cause, you want to begin mangold early, you have only to lay them exposed to the air for a week to wither, and they may be used as early in the season as is required."

"It will be observed that cleanliness, warmth and quiet, are the great points I insist upon, of course coupled with good feeding; but very many tons of oil cake are annually wasted, because the comfort of the animals is not more attended to.—It will also be observed that I have introduced a cheap article of food, which, I think, does the beasts more good, in proportion to its cost, than anything I give them; I allude to pollard, or miller's offal, as some call it. This I generally purchase at £4 15s. a ton. I have used it extensively for some years, and like it much. Some of my neighbors are now following my example."

"Before I conclude, I wish to give these recommendations respecting selling the bullocks when fat: Do not determine upon parting with them exactly at a given time; but if a butcher wants to buy a part of them, a few weeks before you think they are ready calculate how they are paying for what they have eaten—and, if you feel satisfied on that head, do not run the hazard of getting a bad sale by refusing a good offer, or perchance the opportunity may not return. Sell them to butchers at home if you can. Always estimate the weight and value of your bullocks the day before

any one is coming to buy them: and, after letting the butcher handle and examine them well, let them out into a yard for him to see—they will always show better than when tied up."

It was expected that the Hon. A. B. Dickinson, of Steuben Co., would have followed with an account of the method pursued by him and others in this State in fattening cattle for market. He was unexpectedly called from the meeting. At the annual meeting of the Society he gave a very full and interesting statement of the process adopted, and it is to be regretted that we have not a report of his remarks.

From the Hillsborough Recorder.

Oaks, Orange, N.-C., June 20th, 1855.

Mr. Eli Murray, sr., *Mt. Pleasant, Alamance, N. C.*

DEAR SIR:—Yours of the 16th is received, and as you are only one of many who have applied for my experience and solicited my opinion on the application of concentrated manures to wheat, perhaps it may be wise to adopt your suggestion and make one letter answer all. But first I must say you greatly overrate my knowledge of agriculture. Busied as I have been with another pursuit, it has been in my power to give only the odds and ends of time to farming, and the utmost I have learned in this most noble and useful of secular occupations is, the mortifying fact that I know nothing, and have yet the alphabet of agriculture to learn. True I have made some haphazard experiments, some rich, others very poor in results. But to the experiment with Peruvian Guano and Mapes's Improved Super Phosphate of Lime.

My memorandum under date, October 2, 1852, runs as follows: Sowed on a measured acre of ground 150 pounds of Mapes's Improved Super Phosphate of Lime, mixed with six bushels of scrapings from a coal pit, and at an interval of three feet 150 pounds Peruvian guano mixed with $3\frac{1}{2}$ pecks of Plaster of Paris, and ploughed both in with one horse plough. The soil a deep red clay, *very*, and as nearly as possible, *equally* poor. Had brought very poor oats in 1851, and been pastured till August 1852, when it was ploughed deeply with a two-horse plough; and again this week, Oct. 16th. Sowed one bushel early purple straw wheat on each acre, covering with expanding cultivator. Whitewashed the seed, with a saturated solution of salt-water and lime, consistency of thin cream, and dried with ashes.

At that time the Super Phosphate of Lime was \$50 per ton, Guano \$40. The result was such that I preferred the former. Now the former can

be had at the factory of Fred. McCready, New York, who makes it by Prof. Mapes's recipe, at \$45, in quantities not less than ten tons. Cartage about 50 cts. per ton. Freight to Norfolk about \$1.50 per ton; in large quantities and in sail vessels considerably lower. Insurance in August (when it should be ordered) merely nominal. I have inquired of Mr. McCready on what terms he will deliver at Norfolk in large quantities. When advised you shall be informed. The price \$50 per ton at the factory for any quantity under 10 tons.

The Denitrogenized Super Phosphate manufactured at the same establishment, and composed of half Improved Super Phosphate and half dried ground bullocks' blood, is the same price, and pronounced by Prof. Mapes' much superior for general purposes. I have not tried it yet, but had two tons shipped on the 9th inst.

If the citizens of Orange and Alamance incline to try Professor Mapes's manure, it would be wise to form a company, and order the whole at one time. I have no objection to being the organ.

I am experimenting with sundry other concentrated manures on corn this season, on a small scale. The result if of any value, will be reported in due time.

I applied last Fall one bag (160 pounds) to the acre, leaving two lands untreated for experiment; one on deep red clay of loose porous character, the other of close gravelly texture—yellowish clay. Though the season throughout was extremely unfavorable to the development of the manure, yet judging by comparison, the crop was tripled. My harvest began on the 11th inst. Wheat, except the two lands untreated and some rich spots also unmanured, abundantly ripe. I forgot to state that the Improved Super Phosphate hastens maturity ten days, Guano seven.

You ask my judgment on the comparative value of the two manures; and I presume you anticipate the answer. Let it be understood however, that my experiment was on *clay land*.—Perhaps Guano is better on sandy land, such as yours.

One word more. The Improved Super Phosphate of Lime does no harm to any kind of seed by contact, and may be very conveniently sowed by mixing with it an equal quantity of moist earth of any kind well pulverized. Guano, I think, should always be mixed with a large percentage of Plaster of Paris, or charcoal dust, or both.

Very respectfully,

Your obdt serv't,

WM. J. BINGHAM.

P. S. The Improved Super Phosphate of Lime

exhibited equal superiority over Guano in the succeeding crop of corn, and is, I am convinced, more durable in its effects.

From the Hillsboro' Recorder.

MESSRS. EDITORS: Fearing that my hasty scrawl, which I suppose you will print, may give too much currency to my crude notions, and perhaps lead some too sanguine and incautious man into unwise, or at least not the most profitable expenditure of money, I am prompted to make the best amends I can by sending you for publication the suggestions of a much closer observer, and a really intelligent practical farmer.

Yours truly,

W. J. BINGHAM.

* The communication published last week.

Oaks. Orange co., June 22, 1855.

Mr. Eli Murray, sr., Mt. Pleasant, Alamance.

DEAR SIR:—I wrote two days ago a very hasty reply to yours of the 16th inst. in order to meet yesterday's mail, and forgot to urge upon you, and all interested in agriculture, the duty of reading and studying the agricultural journals, any one number of any one of which is worth the per annum price. Of all human employments, there is not one which affords more scope for the exercise of mind as well as body, none more favorable to physical, mental and moral health, or the development of independent and patriotic character than agriculture. Let *poor gentlemen*, too proud for manual, and unfurnished for intellectual labor, despise the plough. Men of sense remember that even 'the king lives of the field,' and that the All Wise has ordained that by 'the sweat of the brow the human race must win their bread.'

But to my purpose. The Railroad brings concentrated fertilizers to our doors, and the President and Directors will probably be shrewd enough to put freight to the lowest possible mark, and look for their profits to the transportation of vastly increased agricultural products. All the fertilizers, as guano, Peruvian and Mexican, poudrette, and all the super phosphates, ground-bones, and common salt, plaster of Paris, and stone or shell lime when used as manures, ought to be brought at a merely nominal freight. The price at the seaboard alarms the common farmer, to say nothing of freight, commissions, &c. It is said by some, that Peruvian guano produces on the soil an effect parallel to that produced on the human system by alcoholic liquors, stimulating to excessive effort, and leaving it proportionally depressed and exhausted, and demanding heavier doses. This, though not applicable to the various super-phosphates, is probably true of guano, only, however when the ground is annually ploughed and cropped and dosed without rest and the turning under

of clover or other grasses. The experience of the best wheat and grazing farmers in Maryland and Pennsylvania ought to satisfy you, and if you read the journals, will satisfy you, that by the adoption of a proper rotation, rest and grass, our old clay broomsedge fields may be brought back to their virgin fertility in eight or ten years, with the aid of not more than two, or three doses of guano, of 200 to 250 pounds per acre.

To Mr. George C. Patterson, of Washington city, a very intelligent gentleman, for many years a practical Maryland farmer, and I hope soon to be a practical Orange county farmer, I am indebted for some valuable suggestions on this subject.—"Pure bone dust is," he says, "more permanent in its effects than guano, and, on some soils, nearly as quick." He thinks that a field, sown in wheat in September, with 250 pounds Peruvian guano and 10 pounds long, late red clover seed, resting one year and sowed in wheat again, (the clover being well and deeply ploughed in) with bone dust, then permitted to remain two or three years before turning under, may be considered as *made*.—He speaks of our claylands. This course involves only five or six years. He prefers guano to any and all manures.

The system of rotation, which has turned the broomsedge of Maryland and Pennsylvania into golden harvests of grain and grass, and which Mr P. recommends, is corn, oats, wheat, clover, clover, wheat, commencing with corn again on the wheat stubble. You cannot have failed to observe how kindly corn follows wheat, and oats, corn, and that wheat does much better on fallow or clover, than after corn. This rotation implies the division of the farm into six fields, and provides for good pasture, and consequently for good beef, mutton and pork, not to mention fat horses and mules. That it was the habit of our fathers, and that it is our own, to plough too much and graze too little, is certainly true, as our abounding old fields clearly testify.

While I disclaim all pretension to the high distinction of being a farmer worthy of the name, I feel great confidence in recommending to you, and the farmers of Orange and Alamance in general, the suggestions of Mr. Patterson.

Very respectfully, your obdt serv't.

WM. J. BINGHAM.

Large Strawberry Patch.—Mr. Rezin Hammond, of Anne Arundel county, Md., has one hundred acres of land set in strawberries. On the 11th inst., says the Baltimore Republican, some thirty acres appeared as if his troop of pickers had not

yet invaded them. The berries hung on the vines as thick as clusters of grapes, and filled the air with their delightful perfume. The picking season generally continues about three weeks, but Mr. Hammond has arranged his crops to be able to pick a week longer than most of his neighbors.—He has employed as many as two hundred pickers this season, consisting of men, women, girls and boys. The price paid for picking is one and a half cents per quart, at which rate good pickers can make some three dollars a day.

His largest day's picking reached about fourteen thousand quarts, (over four hundred bushels! and the average will not be less than five thousand. In all he expects his picking to reach near one hundred and fifty thousand quarts, which is but a fraction short of five thousand bushels!

A SIMPLE REMEDY FOR POISON.

The best remedy, because generally nearest at hand, is to give a teacupful of warm water, mixed with a teaspoonful of table mustard.

This will act very quickly as an emetic. If you have no mustard in powder, as they frequently do not in the country, grind the seeds, or even rinse the mustard pot. Were it only for this, mustard should be kept in every house. If necessary, repeat the dose. It is always safest in very alarming cases to get medical advice; but as this might often be delayed fatally for the sufferer, a knowledge of such a simple remedy, which almost every house affords, is invaluable.

ORNAMENTING WOOD.

Thos. Clayton, of Oldham, England, has obtained a patent for transferring the designs of graining on choice wood, such as mahogany, rosewood, yew, &c., from engraved metallic heated rollers, or flat surfaces, to surfaces of common woods, such as pine, whereby a close imitation of choice and expensive woods is produced.

This appears to be a method of ornamenting wood well worthy of attention from our cabinet makers.

LIME AND GUANO—HOW USED FOR WHEAT.

The following is a copy of a reply which we had occasion recently to furnish a correspondent in the Western section of our State, and the views presented may be equally applicable and useful in other quarters:

1. It is best to spread the lime you have now in the heaps at once, in order that by

exposing a greater surface to the atmosphere the process of reabsorbing carbonate acid gas from the air may go on with the greater rapidity.

2. I think 25 bushels enough for a first application of lime, and that it is better to apply it in that quantity at the commencement of each rotation, until you shall have applied 100 bushels per acre, than to apply that quantity at once.

3. Instead of ploughing in your wheat, I think it better that you should *harrow*, and *cross-harrow* it in, and complete your seeding by making water furrows, and rolling across them.

4. Guano and lime are antagonistic to each other; the lime will drive off all the already formed ammonia, encourage the formation of that now in a compound form, and drive off that also.—Caustic lime never should be applied at the same time where guano, or any other highly concentrated animal manure is applied; for so sure as it is the nitrogenous portions of such manure will be driven off, rendered non-effective, leaving nothing but the phosphates behind to benefit the land and crop that may grow on it. If you doubt the truth of these views, you can test them by simply mixing a table-spoonful of quick lime with a small quantity of guano, stirring them well together, and letting them remain a day or two, when by applying your nose to the guano, you will find there is none of that ammoniacal smell remaining, having been driven off by its contact with the quick lime into the air.

5. If you apply guano to the poor part of your fields, don't apply lime, unless it has been slacked a year or so. Slacked ashes may be applied on soil manured with guano, because it has lost its power to do harm by disturbing the nitrogenous compounds, or interfering with the already formed ammonia; but any application of recently slacked—hydrate of lime—with guano, will defeat your object, as so sure as two and two make four; the ammonia and its compounds will be given to the air, instead of to your crop. Plaster may advantageously be used with guano, it will give the ammonia in its fixidity, retain it for the benefit of the crop, instead of destroying its efficacy as in the case of quick lime.

6. The failure of the crop of corn on the fields upon which you sowed 50 bushels of lime per acre, we apprehend arose from the unprecedented long drought; the success of your present

crop of Mediterranean wheat, in part, I think is ascribable to the action of lime on the inert vegetable and animal remains which it found in the soil, and which it caused to decompose, and thus prepared it to feed your growing crop of wheat. Experience, justified by close observation, teaches us that the benefit of the lime is not apparent the first season—the reason is obvious, it had not time to act upon and predispose the inert remains in the soil to become the food of plants.

It is a mistaken notion that lime will, *alone*, improve any soil; though it should form the basis of every plan to improve worn-out lands—though in this aspect it is all important; unless there be large quantities of organic and inorganic remains in the soil, its benefit when applied alone, will not be visible. It must be assisted by organic manures, applied the year after the application of the lime; that time being necessary to allow it to reabsorb the carbonic acid driven off in the process of burning, and to become a carbonate.

7. You may with safety apply guano to the field now in wheat, that was limed in 1854. It is not considered good practice in theory, to grow the same crop two successive years on the same field, but I believe it may be done for any reasonable number of years, provided you each year apply such manure as will furnish all the elements that enter into the constitution of the plant grown—and guano just happens to be that manure; it contains all the elements, in a form too, ready for the plants to take up as food—it is a little deficient in *potash* but that can be furnished by the application of a few bushels of ashes per acre, or 50 lbs. of saltpetre, per acre.

We will mention a very strong case in corroboration of the belief we have expressed. Mr. Whann, formerly Post Master at Elkton in this State, owns a 10 acre lot adjoining that village, which he cultivated in *wheat* for seven successive years, manuring each year with stable manure, ploughing it in deep, thoroughly harrowing and rolling, and every second year top-dressing with ashes. The result of this experiment was that the average product for seven years, was within a fraction of forty bushels to the acre, some years falling below forty and others above it, the difference being referable to the seasons, and those casualties incident to the wheat crop.

We have no recollection of guano being sown on stubble, but there is no possible reason why it should not succeed as well there as anywhere else. With every 100 lbs. of guano mix 25 lbs. of plaster. Or you may if you please apply your guano alone. plough it in deeply, and top dress with 1 bushel of plaster and 2 bushels of salt per acre, to be harrowed in with the wheat. As your locality is so far removed from the ocean and salt-water rivers, I feel very confident that the salt will exert a very salutary effect.

American Farmer.

From the American Farmer.

To the Editors of the American Farmer.

If you think the enclosed of sufficient general interest for publication, I will endeavor to write a brief paragraph illustrating each of these several propositions from time to time. I wrote a paper on the subject a year since, and suppressed it, in view of the discussion about sorrel in your paper.—While some excitement exists upon this subject, it may still possess interest, because it has cost much of the time and ingenuity of the veterans who have occupied the field of scientific agriculture.

Yours, respectfully,

DAVID STEUART, M. D.

Friday, 15th June, 1855.

CARBON.

SEVERAL PROPOSITIONS WITH REGARD TO ITS ASSIMILATION.

1st.—The elements and temperature of the air as well as the soil, are sources of fertility.

2nd.—The absence of any one of these elements of fertility, is equal to the absence of all, or their deficiency.

3rd.—The deficiency of one element, or its partial supply, may be compensated for by tillage.

4th.—Tillage, or the mechanical conditions produced by husbandry, cannot be dispensed with under the most favorable circumstances, any more than manipulation can be dispensed with in the use of coal, which is now regarded as the substitute for the muscular strength of both man and the lower animals.

5th.—Animal productions are subject to the same defects in development under the circumstances that develop inferior vegetable organisms.

6th.—Inorganic compounds of an inferior order are produced under analogous circumstances, or the deficiency (or absence of the relative proportion of an element—for instance oxygen.)

7th.—Oxaluria, or the oxalic acid diathesis in man, and the development of the oxalis in soil, are both most frequently the result either of an increase of nascent carbon, or a relative deficiency of oxygen; and it is by the same law that the lamp smokes, or deposits its carbon, and the fire produces a blue flame, carbonic oxide;—that other hydrocarbon compounds produce carbonous, or oxalic acid, when imperfectly oxidised.

It is an old saying—"cut down the oak, and the pine will spring up." How it is possible that the young plant,—and even the embryo—can anticipate its wants, and recognise the supply, we cannot divine, any more than we can tell why oil of vitriol will carbonise a stick of wood in order to supply it²

appetite for water; the elements of which existed previously *as wood*; unless the appetite was for hydrogen, and the product (water) was merely a consequence, and not *the* cause of the destruction of the wood. But if these seven propositions are established; we can understand how it is possible for sorrel to grow in a lime-stone soil, luxuriate on the walls of a marl pit, and spontaneously take possession of soil produced by the decay of an old log:—at the same time, *the circumstances* under which lime is a remedy for sorrell, are easily comprehended by the intelligent agriculturist, as the opposite modes of curing the smoking lamp.

DAVID STEUART, M. D.

Chemist of Md. State Ag. Society.

June, 1855.

THE CULTURE OF STRAWBERRIES.

The New York Horticultural Society, at a recent conversational meeting, arrived at the following conclusions in regard to the best method of cultivating strawberries:—

"The best soil for the strawberry was stated to be a gravelly loam. The land should be well drained, and to every acre applied twenty bushels of unleached ashes, ten bushels of lime, and two or three pounds of salt. The ground should be well broken up; animal manures should be eschewed; leaf is the best, and this should be carefully spaded in.—About the first of July is the best time to set out the plants. In doing this, pains should be taken to have them firmly rooted. The roots should be eighteen inches apart, and the plants a foot apart.

Sometimes it will be well to allow greater interval, in which case the interstices can be filled up from the growth of the runners. After setting out the plants, throw on a covering of tan bark an inch or an inch and a half in depth, then water them plentifully and the moisture will be retained along time. After cold weather comes on, cover the strawberry beds and the walks with clean straw, throwing over a little brush, or something to keep the straw in its place. In the Spring remove the straw and make use of some fertilizing agent to give the plants vigor, as sulphate of soda, sulphate of ammonia, or nitrate of potash. Keep the roots out, see that the plants are bountifully watered, and let nothing intervene to disturb or retard their growth till you gather the fruit. The beds should be made over as often as every three years."

From the American Farmer.
AGRICULTURAL IMPROVEMENT IN NORTH-CAROLINA.

TARBORO', N. C. June 15th, A. D. 1855.

To the Editors of the American Farmer:

Gentlemen:—The past decade has witnessed a wonderful revolution in the agriculture of our State.—In our county (Edgecomb) is, by general consent,

conceded the compliment of having set the ball in motion, and the spirit of improvement continues its progress slowly but surely. Another decade, and I trust it will have reached every county in the State.

The origin of this movement has been ascribed to various causes, to the reading of agricultural papers, to the worn and exhausted condition of the soil, forcing the necessity of a change or general bankruptcy of proprietors, and divers and sundry individuals claim the credit as peculiarly their own. This last cause, be it, known however, excites a sneer at the expense of the claimants.

I have an opinion about this matter, which is but the opinion of a co-laborer in this greatest of reforms, and can pass only for what it is worth. It is sufficient to say, that I believe it is true, and can give fair reason for my belief. Mr. Ruffin's Essay on Calcareous Manures made its appearance in '34, and what was then stated about Eastern Virginia, was alike applicable to Eastern North-Carolina. Some few (not more than half a doz.) gentlemen of the old school were subscribers to the Farmers' Register, and the appearance of the essay caused them to try marl, which abounds in nearly every section of our county. This occurred while I was yet a school boy, but I well recollect the talk it excited, and the effects produced. There was so many if not more failures than successes consequent upon its use from inexperience, and the excitement died away. Some however, persevered, and the observation of a few year's satisfied them that Mr. Ruffin's theory was, in the main, correct. This then, in my humble opinion, is the origin of the great change, which has taken place in our agriculture, and to Mr. Ruffin is due the compliment of having brought it about. The use of marl is the base upon which the subsequent superstructure has been raised. The use of cotton seed, ashes, ditch bank, low ground deposit, and the composting system generally are the offspring of the use of marl. The hauling of marl induced the hauling of other materials. The cultivation of cotton has increased the resources (and a most valuable one it is,) each hundred pounds yielding 2½ bushels seed for the compost heap.

The system of compost manuring, which is so common in this county and adjoining counties, which I am persuaded had its beginning in the use of marl, did not become general till within the past ten years. Now compost heaps in the spring of the year are the very best evidence of the improving man, and on forty or fifty plantations in this county, the amount annually applied is enormous. Several that I know of, have this spring applied over 50,000 loads of 5 bushels to the load. The improvement in the appearance of the soil, the increased product, and the high price of land in Edgecomb tell their own tale.

Very respectfully,

Your obt'serv't,

JOHN S. DANCY.

A cow worth Keeping.—Peter Lawson, of Draut, Massachusetts, has just sold an Alderney cow and calf for \$325. Last year the cow produced 17 pounds of butter per week of such quality that it sold at fifty cents a pound; 600 pounds per year is considered her average. Mr. Lawson sold at the same time an Alderney heifer eleven months old for \$126.

From the Southern Farmer.

TURNIPS!

THEIR CULTIVATION, PRESERVATION AND USE.

This is the month for a full and judicious preparation of the soil for the successful growth of turnips, so much needed in winter and early spring for the health and comfort of the many half-starved cattle, swine and horses, which disgrace the farms of some persons, who style themselves devotees to humanity, and practical tillers of the soil.

On the score of humanity, if for nothing else, I would advise all such farmers, however limited their means, time, or area of acres, to devote one acre to the culture of the ruta-baga turnip, which in my estimation stands pre-eminent amongst the various tribes of the turnip family.

To the American Farmer, I am indebted for my first attempt and ultimate success in the culture of ruta-baga, as well as other crops. To those who have not the above valuable periodical to refer to, for the successful cultivation of this root, I propose to submit, through your columns, my mode of operation. The American Farmer advises sowing early in June; whereas, for this climate, I prefer July, having found from experience that the product of the early June planting is more liable to become pithy, consequently more apt to decay after being stored.

Like all other turnips, the soil best adapted to ruta-baga, is a deep rich sandy one, though heavy crops can be made upon a stiff soil, with proper preparation and cultivation.

Whether light or stiff, the land should be well and repeatedly plowed, harrowed and rolled, at intervals of one week from the 1st of June till seeding time, which should not be before the 20th June, nor later than the 1st of August. Later seeding sometimes answers; but in order to obtain a heavy crop, the seed should be in the ground by the 20th of July. At the last plowing, which should be, if possible, the day of seeding, sow broadcast three hundred pounds per acre of best Peruvian guano, turned under with a single horse plow, and then harrow and roll. After which, stake and run off the rows two feet apart and six inches wide, with a trowelhoe, or double-winged plow and into the furrows opened, put well rotten stable, hogpen, or farm yard manure, at the rate of ten horse cart loads per acre, twenty-five bushels to the load.

After the furrows shall have been filled with manure, to save time and economise labor, two very essential items in every practical farmer's calendar, run with a small turning plow, from the centre of the rows, a furrow upon the manure, forming a slight ridge. And then upon these ridges, and of course over the manure, open with a sharp stick—by some called a dibble—small furrows, one inch wide and two inches deep; and with the drill, or by hand, seed at the rate of two pounds per acre. This is heavy seeding, but the certainty of a good stand of plants more than compensates for the additional cost of an extra pound of seed. Cover with the rake or hoe two inches deep, leaving no clods upon the seed.

Preparation of Seed and After Culture.

Soak the seed twenty-four hours in fish or rancid

oil, and afterwards roll them in ashes, plaster^o sand, for the purpose of separating them from each other. For the first ten days after the plants make their appearance, sprinkle them freely while the dew is upon them with equal parts of plaster, soot, and ashes, or super-phosphate of lime. The last would be more advantageous to their after growth, if applied at the rate of two hundred pounds per acre. Hoe and hand-weed them to stand eight inches between each plant. The vacant land between the ridges should be kept clean with a cultivator, trowel hoe, or small turning plow, being careful not to cover the lower leaves with dirt.

With the above preparation, and a favorable season, we may reasonably calculate upon harvesting from six hundred to one thousand bushels per acre. The last number of bushels I have made by measurement.

Preservation through Winter until late Spring.

After the first heavy frost, and before we may expect a hard freeze, have your roots pulled up, and carefully handled so as not to bruise them; cut off the tops to within one inch of the root. If not provided with a root cellar, place them in piles or conical shaped mounds, containing from thirty to fifty bushels each. Around these mounds place corn stalks vertically, six inches thick; over them place dirt taken from the base of the mounds, forming a compact covering one foot thick, and preventing the water from settling under the roots. In finishing the top, insert a wisp of straw, to be removed for a short time after every wet spell, to allow the damp confined air to escape. When wanted for use, remove the whole mound opened to your barn, or place of consumption, to be kept dry. Unless this precaution is used, the turnips will speedily rot. By practising the same directions herein given, the ruta-baga can be kept as perfect, sweet, and tender, until April 10, as when they were taken up.

Manner of feeding.

Various and diversified are the opinions of farmers upon the subject of root feeding to stock. My opinion, founded upon practical experience, is that the most judicious and economical mode of using roots is to cook them well. My way of using them is this: to thirty gallons of water add one bushel ruta-baga, chopped fine; one bushel corn and cob meal; one quart salt; all intimately mixed and boiled till the whole make a thick soup; to be given to swine one gallon per feed; to cattle and horses, mixed with cut straw, shucks or chaff; and to poultry in small quantities, and warm, as a condiment to other food, particularly when sulphur be given them. The skeptical are invited to view my stock. They can then judge by their appearance of the nutritious qualities of ruta-baga, and corn and cob meal soup.

J. G. T.

Cloverdale, near Petersburg, June 24th.

Selected for the Arator, from the National Intelligencer.
AGRICULTURAL DIVISION OF PATENT OFFICE.

Insects Injurious to Vegetation.—The Peach Tree Borer.—We make the following extracts from the pen of Mr. GLOVER. (treating of the peach tree borer.) which will be published in the forthcoming agricultural report:

"The peach tree borer (*argania exilis*) is produced

from eggs deposited at the foot of the peach tree by a wasp-like moth of a steel-blue color, with an orange ring round the abdomen. The eggs are deposited during the summer upon the trunk close to the ground, and sometimes also in wounds or between the crotches of trees. The worms when hatched devour the inner bark and young wood, generally just beneath the surface of the earth, frequently girdling the tree and destroying its life. Often when the leaves turn yellow or appear sickly as in the disease called the 'yellows,' if the ground round the trunk should be turned up the cause of the disease would be discovered to be this worm, which should be immediately cut out and destroyed. Trees attacked by these insects can be easily recognised by the gum which oozes out of the wounds they have made. There appears to be a succession of broods during the warm season, as very young worms are found at almost all times except in the colder months; but it has been stated that they must pass a whole winter before they can assume the perfect state. On the Hudson, in New York, the moths come out mostly about June or July, and from the chrysalides taken from a peach orchard I found nearly twice as many males as females. Nectarines and apricots are as liable to be attacked by these worms as the peach. They are also sometimes taken from the plum tree roots, as well as the knots or excrescences to which the plum is liable, but which are in no wise caused by them. The worm is about an inch in length, of a yellowish-white, with an amber-brown head. The chrysalis is brown, and formed in a case of an oval shape, made of the chips gnawed from the bark and a gummy substance which issues from the mouth of the insect. The perfect moth measures about an inch across the expanded wings. The male is smaller than the female, and may easily be recognised by all the wings being transparent, bordered and veined with steel-blue, while the upper wings of the female are opaque and of a dark-blue color. The under ones are transparent, veined and bordered with blue as in a male. Her body is likewise distinguished by a broad orange-colored belt.

"Dr. Harris, in his valuable 'Treatise on the Insects of New England Injurious to Vegetation,' recommends the following remedy:

'Remove the earth around the base of the tree; crush and destroy the cocoons and borers which may be found in it and under the bark, cover the wounded parts with the common clay composition, and surround the trunk with a strip of sheathing paper eight or nine inches wide, which should extend two inches below the level of the soil, and be secured by strings of matting above. Fresh mortar should then be placed around the root as to confine the paper and prevent access beneath it, and the remaining cavity may be filled with new or unexhausted loam. The

operation should be performed in the spring or during the month of June. In winter the strings may be removed, and in the following spring the trees should again be examined for any borers that may have escaped search before, and the protecting applications should be renewed.' The ashes of anthracite coal have also been recommended to be put into the cavities made when the earth has been removed from around the trunks when searching for the worm; and if the trunks are thoroughly searched three or four times a year, especially in the earth near the roots, and the grubs or chrysalides dug out and destroyed, these insects would soon cease to be as injurious as they are at present."

THE NEW FRENCH SILVER.

The public have been interested latterly by statements respecting a new method of obtaining in large quantities, from that most abundant of deposits, common clay, a metal which rivals in beauty with silver, and surpasses it in durability—not to mention other qualities. The discoverer—for so we must call him—is Mr. SAINTE-CLAIRE DEVILLE. Aluminium, which hitherto existed in very small quantities, and esteemed rather as a curiosity, can now be produced in masses sufficient and cheap enough to replace copper, and even iron in many respects, and thus place the "new silver," superior in some points to the real article, into such common use as to suit the means of the poorest persons.

It is by triumphs like these, which illustrate modern science, that the luxuries as well as the comforts of life are coming within the reach of all. It is by such discoveries—fruits of scientific research, which are universal in their application or results—that humanity is benefited, and surely, though slowly, raised out of the ugliness and roughness of material wants. It is thus that the mind is civilized, by acquiring a taste for the useful and beautiful of a higher order, and that more progress is made by material and external changes upon the mind than can be accomplished during centuries by preachings and denunciations. Let us hail, then, every such discovery as a blessing, and every discoverer as the true, disinterested friend of humanity.

We learn from Paris that the members of the Academy of Sciences and the numerous auditory were loud in their admiration and surprise at the beauty and brilliancy of many ingots of aluminium presented by Mr. DUMAS, the celebrated chemist. It was impossible to believe they were not silver until taken into the hand, when their extraordinary lightness at once proved the contrary. That

a metal should weigh so little seemed almost incredible.

The price of aluminium a short time since in France was about the rate of gold! Mr. DUMAS assured the Academy that, owing to recent discoveries reducing the expense of extracting it, the cost of production was now about one hundred times less; and Mr. BALARD, another member, stated that there was little doubt the effect of competition in its manufacture, together with the advantage of throwing it open to the industrial resources of the world, would now be to reduce the price as low as five francs the kilogramme, or about forty cents a pound.

This important result is mainly attributed to the facility with which we are now able to procure sodium in abundance, which is the active agent for the revivification of aluminium, and which was at one time very expensive. Sodium is obtained by the decomposition of carbonate of soda by charcoal. By the aid of a little lime is has been found easier to separate it from oxygen. The conversion of aluminous earth or clay into chloride of aluminium takes place so easily that the price of the chloride only comes to about ten cents a pound.

Mr. DUMAS observed that the generalization of the procedure of Mr. DEVILLE, the application of chlorine to the extraction of metals, forms a new era in metallurgy.

Among the many remarkable qualities of aluminium, such as its resistance to oxydation, either in the air or by acids, its hardness, its wonderful lightness, its malleableness, the facility of moulding it, &c., Mr. DUMAS mentions another, its sonority. An ingot was suspended by a string, and being lightly struck emitted the finest tones, such as are obtained only by a combination of the best metals.

Nat. Int. July 19, 1855.

For the Arator.

MR. EDITOR: On page 54 of the 2nd or May number of your paper, your Granville correspondent makes an inquiry, for the proper course to be pursued, to raise a large quantity of peas for Hogs. In light lands, or lands at all adapted to the growth of the pea, this is an easy matter.—Many farmers in this, Bertie and Martin counties, raise the cow pea for sale, with profit; always finding a ready and good market in Charleston; and within a few years past, quite a demand has risen in New-Orleans, as they are used in Louisiana to renovate lands, which have been worn or injured by too severe cropping of cane. The land which

will produce the largest amount of vine, is not apt to make a heavy crop of peas, a fine yield being usually obtained from vines that do not run, but grow in clusters.

The best crop of peas can, certainly, be obtained by planting in rows or hills, so that they can be worked, and give one or two plowings, but our farmers seldom adopt the plan, as, with proper care, they can raise as many as they can save or their hogs use to any advantage, by planting or sowing on corn lands, thereby getting two crops, from the same land, and with the same working.—Our plan is to plant on the ridge between the corn hills, from 15 to 20 peas in a hill from the 20th Mar. to 15th June. This is done when we expect to pick. When they are designed as a renovator of the land, or for fattening hogs, we sow on corn land, when the corn is hilled, from $\frac{3}{4}$ to 1 bushel to the acre. When the peas are sowed and corn hilled by the 10th July, they will usually perfect and ripen before frost which is apt to injure them if sowed later.

We have no difficulty in raising peas enough for the hogs: even after picking over the crop, enough will be left for them.

If your correspondent will refer to the next page, of the same No. of the Arator, he will find an inquiry, for the causes of a serious difficulty in raising and fattening hogs on peas. That inquiry was, why hogs running and fattening on peas, and then becoming poor, either die, or dwindle with disease? and why, if they get access to a pea field in Jan. or Feb., they are killed? I believe that every pea and hog raiser will admit that these results follow.

The prevailing opinion, which I incline to believe is true, is, that, when the pea is rotten or decayed, even swollen, in the hull, by heavy rains, they affect the kidneys. I have known several hogs, thus dying, opened and examined, and in every case, the kidney was diseased. Whether this be the true cause, it is certain that these results follow, and the only way to avoid the evil is, to prevent the use of the pea, after the fall and winter rains have injured them. But this injury is not confined to hogs made fat, or running on peas, and then permitted to get poor. Fat hogs, often, when ready to kill, become diseased from eating peas. Early in October last, I gathered a field of corn, (having first picked a part of the peas) and turned my pork hogs on the balance, which was a fine crop; and by the 1st November, removed them to another field, and about 29th Nov. took them up in a close pen, and found several sick. In a week 15 had died, I have frequently

had them die while running in the pea field, when quite fat; and the complaint is common. This difficulty does not occur every year. Some years but a few will be diseased, others none; and again, others, nearly the whole lot will be affected. Ordinarily, the hogs will not be injured, by the pea, if a dry fall, or if they eat the pea while sound.

So, if your correspondent succeeds in raising a large quantity of peas for his hogs, I hope he may not, at the same time, supply them with the seeds of disease, which may reduce his quantity of pork.

No hogs should be suffered to run on peas after 1st to 15th Decr, or after any heavy rains. So soon as the pea is swollen in the hull, or injured, by the fall or winter rains, they benefit no stock—no hogs should be permitted to take the pea field, except those designed for pork, unless the owner be prepared to furnish them, until next fattening time, with a bountiful supply of corn. Milch cows eating peas, after being thus injured by the rains, in Nov. or Dec., will be affected by them. The milk and butter, though looking rich, will have an unpleasant taste, rendering them valueless.

Though, Mr. Editor, peas are very valuable for stock, properly managed, yet their great value consists in their renovating properties. A Farmer will be well paid, for seed and labor, by sowing merely as a manure. Land may be cultivated, in corn, without injury, for many years, if sowed heavily in peas, and turned in. It is the finest way to prepare land for wheat. Fallow lands designed for wheat, will well pay the owner, if sowed in peas in July, and turned in when the wheat is sowed.

S.

Plymouth, June 28th, 1855.

AGRICULTURAL DIVISION OF PATENT OFFICE.

Squashes and Pumpkins.—In a communication received from Dr. HARRIS we have some very interesting details respecting this favorite vegetable production. There is much confusion in regard to both the names and qualities of the "*Cucurbita*" of botanists, and few persons are sufficiently well acquainted with the tribe generally to be able to make a choice for field or table. It is assumed that some of the finest varieties of the squash or pumpkin originated in the central and eastern parts of this continent. The first settlers found them in the gardens and fields of the Indians; and Champlain saw the bell-shaped squash or pumpkin of New England as far north as Saco in 1605 and 1606. Another variety, cultivated by the Iroquois, still bears their name in France.—They are also found in North Carolina and in the West Indies. They are indigenous to Brazil, and even Patagonia has added one to the common stock. Roger Williams states that the Indians of Massachusetts called the varieties found there "*Askutasquash*,"

and that our term "*squashes*" is derived therefrom.—The tribe described by him and others, as cultivated in New England as "*summer squashes*," forms a part of the group called by Linnaeus "*Cucurbita melopepo*." In East Florida there is a wild squash vine, bearing a small yellow fruit about the form and size of an orange, which climbs to the tops of the trees. Mr. Nuttall says that the "*warted*" squash (*C. verrucosa*) was cultivated by the Indians of the Missouri. The "*egg*" squash (*C. ovifera*) Linnaeus supposes to be a native of Astracan, in Tartary; yet, on the other hand, there is reason for believing that it may have been introduced with Indian corn from America; but, however strong the evidence in favor of an American origin for some of the squashes, it cannot be doubted that the ancients were acquainted with them. Euthydemus, a Greek writer, calls the squash the "*cucumber of the Indies*," because the seed was brought from the East; and Pliny particularly describes two kinds: one which climbs to the tops of walls and houses, while the other keeps the level of the ground. Any form was given to the fruit by enclosing it in willow baskets as soon as the flowers fell off. Pliny also speaks of a wild variety which the Greeks called "*somphos*." Galen and Dioscorides speak of them in reference to their healthful or medicinal qualities. The true "*mammoth*" pumpkin, the "*Poriron*" of the French, (*Cucurbita maxima*) is among the most attractive. Its form is an oblate spheroid, depressed at the blossom and stem end. It grows frequently to an immense size, weighing as much as sixty pounds and being two feet in diameter. It varies much in color, form, and size, and the original characteristics are sometimes lost in the changes of its varieties. Dr. HARRIS seems to regard the "*Valparaiso*" or "*Potiron*" group as more tender than the pumpkin or "*Pepo*" group, and more subject to the attacks of worms at the roots. The "*custard*" squash or pumpkin has a fine light yellow flesh, much esteemed in making pies and puddings. It has a hard, pale, buff-colored shell, not at all woody. The "*summer*" squashes differ from the above in having a hard, woody shell, with a slimy fibrous pulp, which, when dry, becomes a mere stringy and spongy mass. These fruits can only be eaten while tender and succulent, and never in a ripe state. On account of their woody shells they are sometimes mistaken for gourds, which, both as to flowers and seeds, differ materially from them. Among the most agreeable varieties are the "*orange*" or "*apple*" squash, (*C. aurantiaca*.) For table use they are superior to the "*scallop*" or "*warted*" squashes. Cultivation has improved the qualities of all these productions, and so increased the varieties that it is now almost impossible for botanists "to determine which of the known kinds are typical species and which are mere varieties."

Reaping Machines by the Thousands.—Says the Scientific American: "We have been informed by a manufacturer of agricultural implements, one who is excellent authority, that between fifteen and sixteen thousand reaping machines will be manufactured and sold this year in this country. The demand is so great that manufacturers cannot make them fast enough for their orders. This affords evidence of agricultural prosperity, as the cost of these machines will amount to nearly two millions of dollars.

For the Arator.
Louisburg, June 20, 1855.

AGRICULTURAL SCHOOLS.

We have been pleased with and no doubt, in many instances, much benefited by the various articles, which have appeared in your paper from time to time. But of them all, we do not recollect of having seen one, which advocated the establishment of an Agricultural School in Old North-Carolina.

We have sent you, then, these random thoughts of ours upon this matter, not because they are strong or to the point, (for we are no writer, this being our first communication to your or any other agricultural paper), but with the hope that some of your able contributors might be called forth, who could show "in bold relief" the importance of a school of this character, and the beneficial results that would flow from it. It may be surmised from the style in which we have commenced, that perhaps we may be somewhat of a monomaniac: not so; it is true this is a matter in which we feel no small degree of interest, not that we should expect to be benefitted, but because we are anxious that those who are to follow after us, should have superior advantages. We have felt too keenly the "suart" of agricultural ignorance, not to be wide awake to the importance of this matter. Our education was any thing else than practical; not more than one or at most two branches have any bearing upon the avocation in life which we have chosen. This is true not only in regard to ourself but hundreds of others. The fact is, education is as necessary to a farmer, (that is a really successful farmer,) as it is to those who intend studying one of the professions. The time has been, but that time may now be numbered among "the things that were," when it was thought that any person could make a good farmer, who would work industriously. A more erroneous notion never was entertained. It is true, if a man has a very rich body of land, he may, by clearing a considerable portion every winter, make fine crops. But what credit has he? Has he done anything more than any one of his negroes might have done? All that was necessary for him to do, was to go through a process of cultivation of any sort, and a good crop would crown his efforts.

Physical labor is requisite, in order to ensure good crops; but it is far from being the only thing; it must be governed and directed by judgment, by knowledge. We would appeal to you, Sir, have not you often heard it said that such an one worked industriously; but somehow his labors did not amount to much? If you have not, we have,

and, besides, we have seen cases of this sort.—The truth is, he deserves the most praise who takes up poor worn out land, land abandoned on account of its sterility, and brings it up to a high state of cultivation. This has been done, and can be done again, and it is just what the young now growing up will have to do, who intend settling in N.-Carolina: 'for the plan of our forefathers was to settle in the woods, clear a place for a garden, and then keep on clearing and wearing out the adjacent woodland, until now it is an absolute fact, much of the arable land on many farms, lies at inconvenient distances to cultivate. Is it not the case that at many places, otherwise handsome, the first things you see, on taking a front view, are old fields covered over with hen-nest grass and cut up with gullies prominent as the bones of an old horse turned out upon said grass to procure his living?

You look around in vain for the farm; but look away off yonder, some one or two miles, don't you see those large trees, with their naked tops peering up above the hills? There you will find this man's farm, and he never does see any portion of it, unless he goes expressly to look at it.

Now, this should not be so; for there is nothing which sets off a place more gracefully, than to see fine luxuriant crops growing around. Nothing creates a better impression on the minds of visitors in favour of a man's industry, thrift &c.—Besides, his wife (if she possesses that kind of taste for the beautiful, if she has not she ought to cultivate it,) would find delight in looking out from her own windows and doors upon her husband's fields groaning under golden crops.

Mr. Editor, we did not set out with the intention of confining our remarks strictly to the caption, but if you think this worthy of a place in your paper we will have more to say about it another time.

S. S. S.

THE SWEET POTATOE.

In this month, (May,) this crop must be started. However well late plantings under favorable circumstances, may do, our experience and observation have been decidedly favourable to early planting.—The slips not only live better, but generally the crop is greater. Let no time, therefore be lost in bringing this very valuable crop forward: Let the land be very thoroughly prepared, and well pulverized. If the hills or drills are freshly made, very little rain is necessary, this early in the season, to justify a planting especially if the slips are set out deep and late in the day. Nothing but the best ought to be left uncovered.

The following is taking the rounds without credit.

We are not certain, but believe it originally appeared in that valuable journal the *American Agriculturist*.

A MODEL FARM—A CHALLENGE.

John Singerson and brothers, of Missouri, challenge the farmers of the whole Union to produce a farm to excel theirs in variety of productions, amount of production and extent of surface cultivated. Their farm is located about seven miles south of the city of St. Louis, and has been under cultivation less than ten years.

All persons who think they can excel Singerson farm, and desire to enter the lists for a "sweep stake" prize, are required to deposit \$500, and the award is to be a service of plate, of the value of the deposit of the competitors after deducting the necessary expenses of the Commissioners making the award, who are to consist of one from each State appointed by the Governor thereof, of such States only, however as have Competitors for the prize. The Commissioners are to visit the farms, and decide the matter in the months of September and October next.

How many competitors can the Empire State produce? What say our farmers of the Mohawk valley—"the heart of the world?" As a matter of interest to our readers, we subjoin a description of the Singerson farm which we find in the *St. Louis Democrat*:

"Statistics will better show its properties than elaborate descriptions of scenery. Four hundred acres of pasture, grove and lawn—one hundred and fifty acres of meadow, eighty of wheat, sixty-five of oats and rye, corn and potatoes enough to supply the numerous family and stock—nine miles of Osage orange hedge, well trimmed, and much of it large enough to turn cattle, adds greatly to the picturesque beauty of the rolling prairie; enclosing pastures, orchards nurseries, flower gardens and fields—a verdant neck-work binding all together, protecting and ornamenting at the same time. There are two hundred acres of orchard. There are two hundred acres of orchard just coming into vigorous usefulness—eight thousand peach and apricot trees, and from present appearances, some of them will give many a rich treat ere the wintry winds sweep over us again. Pear, apple, plum and cherry bear swift witness of the good time coming."

Twenty-five acres of strawberries have already given our St. Louisans a foretaste of the future, and dozens of men are now engaged replacing the old beds, and enlarging them by the acre. Three hundred thousand grape cuttings have been set

out this spring, and most of them are doing well—forty thousand evergreens in fine and fresh condition—two hundred and ten thousand quince trees are ready for the budding of pears—twenty bushels of peach stones and seven bushels of apple seeds have this season been planted, and acres are covered with uprising life. A great variety of forest trees are cultivated for the market, and it would be easier perhaps to tell what the Messrs. Singersons have not, that is indigenous to this climate, than to enumerate what they have.

"The substantial stone farm house is surrounded by a large door yard, which is reached from the stone road by a serpentine road through a wooded lawn. A semi-circle avenue bordered by cedars, snow-balls and lilacs, leads to the door, where kind hospitality and a farmer's welcome meet the numerous visitors that through the summer months throng the place to breathe the fragrant air, and luxuriate for a brief hour in the beauty and flowers. Parterres of choice flowers, nurseries of roses blossom in the sun by the half acre. Borders, walks, summer-houses, arbors, on every hand, in a magnitude or magnificence that keeps you all the while in wonder and admiration, and form a whole that must be seen to be appreciated, and has seldom, if ever, been surpassed. The whole stock of trees, shrubs, vines and evergreens numbers two millions, Mr. Singerson says it is nearer three millions, and he puts it down at two millions lest the incredulous should be frightened at its vastness.

How to SET POSTS ON ROCK.—In an answer to the inquiry of one of your correspondents. I would suggest the following plan: I drill a hole in the rock, bore a corresponding hole in the end of the post. Insert a round bar of iron of sufficient length and size to fill the hole and drive down your post. If you want to make particularly fast work, split the ends of the iron, put in a small iron wedge and then drive home, and it must stay till the iron rusts or the rock is blasted: this is the way mudsills or mill dams are bolted to rock bottom in this country.—*Country Gentleman*.

The Canadian authorities, it appears are not doing the honest thing in relation to the reciprocity treaty. While no custom-house fees are exacted here on the entry of articles from Canada free under the treaty, they are levying a duty of 2½ per cent, on the value of barrels or bags containing flour from the United States. Under their construction of the treaty, the flour is exempt, but the barrel containing it is subject to duty. The Treasury Department at Washington has taken steps to set this matter right.

We are indebted to the Journal of the New York State Agricultural Society—a very ably conducted and instructive periodical, published at Albany—for the following:

GUANO.—A gentleman of Wilmington, Delaware, has given us the following account of the use of guano, under his own direction, as well as the experience of others, in the State of Delaware, which will be valuable to those who are desirous of experimenting with this fertilizer. No experiments can be satisfactory but those made with the *genuine* Guano. The gentlemen in Delaware are particular in securing the true article, and reliance therefore is to be placed upon their statements.

"I have postponed answering your queries with regard to guano, in order to submit them to some of the best farmers of this neighborhood, whom I was to meet yesterday. The general result of their answers is that the effect of guano is in inverse ratio to the richness of the soil. On the rich farms of Chester county, Pennsylvania, guano has not been much tried, as they have no need of it, and when tried, gave unsatisfactory results. On the contrary, on the naturally fertile land, but exhausted by injudicious cultivation, of our lower counties, it has produced very good and durable effects.—Mr. Bryan Jackson, an intelligent agriculturist and practical farmer, informs me that an application of 300 pounds guano per acre produced on his place a crop of wheat equal to the one grown on the same land with seventeen cart loads of barn yard manure. He had the ground plowed deep previously to spreading the guano, and had it covered by another shallow plowing. He states that he obtained no results of guano for oats or barley. However one of my neighbors gets good crops on poor land in which he plows guano. I was also informed that a crop of corn of 70 bushels to the acre had been obtained on poor land from a mixture of guano and plaster, at the rate of a handful in each hill, put in before dropping the seed. This is only an hearsay. My own experience with this manure dates from ten or eleven years ago, when I tried it for wheat with very good results, and I obtained the best wheat where the most guano had been laid on. The next year, having a new grass field that had given a very short crop at the first cutting, I applied on twelve acres of it a top-dressing of one ton of Ichaboe guano, mixed with equal bulk of plaster. The result was, for the following year, a crop of upwards of two tons of hay to the acre on the twelve acres which had been top-dressed, while it was quite light on the part that had received nothing. Having overdressed the remainder of the field in the same

way, it became quite equal to the first part I have had that field mowed or pastured six years before it was necessary to plow it again. Since then I am so satisfied with this fertilizer's efficacy that I do not experiment upon it. I use it in conjunction with stable manure, plowing it down, except for ruta-baga and other turnips, for which I cover it with a slight harrowing, and also for top-dressing wheat stubble, at the rate of 300 pounds per acre mixed with equal bulk of plaster. For this operation I wait rainy weather, in order to have the guano immediately washed in the ground. It is, however, desirable to have it performed early, in order to let the clover and other grass get strong enough to withstand the pernicious influence of winter.

"On the whole I think guano is most invaluable on exhausted soils to produce straw, fodders, &c., or to enable the farmer to increase his manure, but that when applied exclusively to the production of grain, without combining with it stable manure or green crops, as I believe is done in some parts of the country, it will ultimately *leave the lands in a worse state of exhaustion than ever.*

SPARE THE BIRDS!—BIRDS AND INSECTS: Wilson Flagg, in a late number of Hovey's Magazine, makes five classes of insects, and as many of birds, acting as natural checks upon the increase of insects.

The swallows are the natural enemies of the swarming insects, living almost entirely upon them, taking their food upon the wing. The common martin devours great quantities of wasps, beetles and goldsmiths. A single bird will devour five thousand butterflies in a week. The moral of this is, that the husbandman should cultivate the society of swallows and martins about his lands and out buildings.

The sparrows and wrens feed upon the crawling insects that lurk within the buds, foliage and flowers of plants. The wrens are pugnacious, and a little box in a cherry tree will soon be appropriated by them, and they will drive away other birds that feed upon the fruit, a hint that cherry growers should remember this spring and act upon.

The thrushes, blue-birds, jays and crows prey upon butterflies, grasshoppers, crickets locusts and the larger beetles. A single family of jays will consume 20,000 of these in a season of three months.

The woodpeckers are armed with a stout, long bill, to penetrate the wood of trees, here the borers deposit their larvæ. They live almost entirely upon these worms.—*Westfield News Letter.*

ALTERING COLTS.

Wilkesboro', July 2d, 1855.

THOS. J. LEMAY, Esq.

Dear Sir: Please accept my thanks for the obituary notice of Capt. Samuel Johnson, furnished from the Star: Also for the three first numbers of your valuable paper, which I think should be read by every Farmer. I send you one dollar as the yearly subscription for the "Arator."

I notice in the May number of your paper, an inquiry made by Dr. Alex. Wilson, jr., for the *modus operandi* of "altering colts," when only one testicle has come down. I will state that for many years I have been much in the practice of altering horses and mules of almost all ages; that as to my practice with colts with but one testicle down, I take the one out, and almost invariably, in a few months, the other one comes down, and may then be taken; and here I would say that this is by no means a bad mode of proceeding—as it hurts a colt only one half as much to take one out at a time, and consequently only one half the danger of the colts dying from the operation, which, in a fine colt, is a great object, and would be a good and safe mode of practice in all cases—as I have been informed it is in some countries.

As to the general practice or mode of operating by me, it is never to throw a colt or horse. I put around the nose of the horse a loop of small rope; then run a strong stick, about one foot long, through the loop, and twist—make one hand hold the stick and another the bridle—first having backed him up in the jam of a fence or nook of a stable; then, with knife in hand, go to the getting-up side, grasp the right testicle in the left hand—taking hold of the cord and parts above the testicle as much as possible—squeeze it tight—then make a free incision, at one stroke, with the knife, from before backwards, so as to drop out the testicle at once; then grasp the testicle, draw it down gently below the integument; then you will find, especially in a horse of much age or size, the cremaster muscle, strongly drawing up the testicle; and if the testicle is in the right position, the muscle will be on the hinder part of the cord; then run your knife through the cord, between the muscle and the blood vessels, with the edge of the knife looking from you: then cut the muscle across just above the testicle and its appendages. This will let the testicle drop, & the muscle at once flies up. Then if you clamp, you clear the testicle and cord several inches; and then slip the clamp on from behind forward, and bear it firmly together with the fingers of the left hand, whilst the twine is wrapped on with the right, and tied. Then the other testicle is treated in the same way. The clamp is left on ——— Then cut the string on the foremost end, and they will readily drop off. The practice of clamping I follow in all cases, if the horse is passed two years old, or is very well grown, as in such case the risk of bleeding is considerable. In the smaller or younger ones, I decidedly prefer not to clamp; but after the muscle has been cut loose from the testicle, draw it down with force, and scrape it well with the edge of the knife, pulling it out as long as possible, and you need not fear bleeding too much. Always let a horse stand half an hour or such a matter before he is travelled, after the operation, in the shade. Take care never to include in the clamps the cremaster muscle or any part of the skin of the sheath. If the muscle is included, it may draw the cord out of the clamp, or may

become inflamed and swell very much, and cause much delay in the cure, as I have sometimes seen occur from such mistake in practice. It is important to make a free incision through the scrotum or integument. The clamps are simply made of sticks of Elder or Shumach—4 or 5 inches in length—cutting round each end $\frac{3}{4}$ inch from the ends—split them open—splay off the inside of one end—scrape out the pith for about two inches—fill with corn dough. Then spread on the composition—equal parts of corrosive sublimate, red precipitate, and blue stone rubbed fine—Small quantity answers. Then tie the twine around the spliced ends, and the clamps are ready for use. They should be held by an assistant, and handled, together with the twine, as needed, &c.

With regard to the proper season of the year for altering horses, I think Fall and Spring greatly preferable; though I have done it at all times and seasons. I think the most objectionable is cold weather. I pay no attention to signs.

As I said in the outset, that I had much experience in this kind of surgery, I will also tell you the most probable reason: I have invariably done it gratis, for my neighbors, which has often brought them for 20 or 30 miles around.

And as this is rather an important interest of our Farmers, as most of them raise more or less horses and mules, and as I think most or all of our Farmers should alter their own stock, horses and mules included—all of which they could easily do if they would try, without having to call on others to do it for them—I have written you this long letter—to dispose of as you may think fit.

Most respectfully, your obt. servt.

JAMES CALLOWAY.

USE COPPERAS.—The papers are every where urging the free use of copperas as a disinfecting agent. It is a cheap article, costing only three cents per pound, and can be found at the druggists, and many of the larger grocery stores. A couple of pounds may be dissolved in ten quarts of hot water, and the solution poured into sinks, gutters, cess-pools, and all other filthy places, with good effect. We advise all housekeepers to purchase five, ten or fifteen pounds, and make a free use of it as above recommended. Cholera or no cholera, their dwellings and out-buildings will contain a purer atmosphere after the use of copperas.

A Spiritual Story.—A lady at Columbus, Ohio, recently inquired of the spirit rappers how many children she had.

"Four," replied the spirit.

The husband, startled at the accuracy of the reply, stepped up and enquired—

"How many children have I?"

"Two!" answered the rapping medium.

The husband and wife looked at each other, with an odd smile on their faces for a moment, and then retired non-believers. There had been a mistake made some where.

For the Arator.

MR. EDITOR:—In reading over for the second time that very useful and interesting book, "Colman's European Agriculture," I have been struck with the eloquent tribute to a "Life in the Country" found therein, and was so much pleased with it, that I have copied it off and now beg the favor of you to insert it in your very valuable agricultural journal.

Permit me, sir, to add that a true fondness for the country—for its quiet but true pleasures—constitutes a source of happiness, than which there is none purer—none more conducive to our highest enjoyment.

July 2d, 1855.

GRANVILLE.

LIFE IN THE COUNTRY.

To live in the Country and enjoy all its pleasures, we should love the Country. To love the Country is to take an interest in all that belongs to the Country—its occupations, its sports, its culture and its improvement, its fields and its forests, its trees and rocks, its vallies and hills, its lakes and rivers; to gather the flocks around us and feed them with our own hands; to make the birds our friends and call them by their names; to wear a chaplet of roses as if it were a princely diadem; to rove over the verdant fields with a higher pleasure than we should tread the carpeted halls of regal courts; to inhale the fresh air of the morning as if it were the sweet breath of infancy; to brush the dew from the glittering fields as if our path were strewn with diamonds; to hold converse with the trees of the forest in their youth and in their decay, as if they could tell us the history of their own times and as if the gnarled bark of the aged among them were all written over with the record of by-gone days, of those who planted them and those who early gathered their fruits; to find hope and joy bursting like a flood upon our hearts as the darting rays of light gently break upon the eastern horizon; to see the descending sun robing himself in burnished clouds, as if these were the gathering glories of the divine throne; to find, in the clear evening of winter, our chamber studded with countless gems of living light; to feel that "we are never less alone than when alone;" to make even the stillness and solitude of the Country eloquent; and above all, in the beauty of every object which presents itself to our senses and in the unbought provision which sustains and comforts and fills with joy, the countless multitudes of living existences which people the land, the water, the air, every where to repletion, to see the radiant tokens of an infinite and inexhaustible beneficence, as they roll by us and around us in one ceaseless

flood; and in a clear and bright day of summer to stand out in the midst of this resplendent creation, circled by an horizon which continually retreats from our advances, holding its distance undiminished, and with the broad and deep blue arches of heaven over us, whose depths no human imagination can fathom; to perceive this glorious temple all instinct with the presence of the Divinity, and to feel amidst all this, the brain growing dizzy with wonder and the heart swelling with an adoration and holy joy, absolutely incapable of utterance—*this* it is to love the Country, and to make it, not the home of the person only, but of the soul.

PRESERVING FRUITS.

In several previous numbers of the Home Magazine we have referred to Dr. Arthur's "Self-Sealing Cans and Glass Jars" as affording the readiest facility for doing what is proposed. They are made with a channel around the mouth, into which a cover fits loosely. Into this channel a very adhesive cement is poured and allowed to harden. Thus prepared for sealing, the cans and jars are sold, and the housekeeper, after filling her vessels and applying the heat, has only to warm the cover and press it down into the cement, when the work of sealing is done. These vessels can be used, year after year, and as the cover goes over the whole top, may be as perfectly cleansed as any other open vessel.

As the fruit season has now commenced, housekeepers should by all means try some of these cans and prove them to their own satisfaction. At small cost and trouble they may now have fresh or stewed fruits or tomatoes on their tables all next winter, and at summer prices. The method of putting up fruits in this way we will briefly give:

Fill the can or jar with ripe fruit, adding a little sugar, simply enough to render the fruit palatable, and set in a vessel of water, (warm or cold.) Let the water boil and continue boiling until the fruit is well heated through—say for half an hour. Direction has been given simply to let the water boil, but such direction is defective, as at this time the fruit in the centre of the vessel will be scarcely warmed. Should the vessel be then sealed fermentation will take place. The heat must thoroughly penetrate the contents of the vessel. As soon as the fruit is sufficiently heated, warm the cover, press it into its place, and the work is done.

Another way is to make sirup of two pounds of sugar for every six pounds of fruit, using half a pint of water for every pound of sugar. Skim the sirup as soon as it boils, and then put in your fruit and let it boil ten minutes. Fill the cans or jars and seal up hot. Some make a sirup of half a pound of sugar to every pound of fruit, and some use only a quarter of a pound of sugar to a pound of fruit, while some use no sugar at all.

To keep peaches, pare and cut them up. If thrown into cold water they will retain their firmness and color. Heat them in the cans or jars as

above, or boil them ten minutes in a sirup. In this way strawberries, raspberries, cherries, plums, peaches, &c., may be kept for any length of time in the same condition that they were sealed up, and with flavor unchanged. For small fruit it is best to make a sirup without water, and boil the fruit in it for only a few minutes.

Fresh stewed fruits of all kinds may be kept in these vessels. It will only be necessary to stew the fruit as for the table, adding the amount of sugar required to make it palatable; fill up the vessel with the hot fruit and seal at once. All ripe fruits preserved in this way will be found as fresh in the winter season as if just taken from the tree and stewed.

Tomatoes.—Take off the skin; put them in a preserving kettle or other convenient vessel and boil them for a quarter of an hour; fill the cans or jars and seal up hot.—*Arthur's Home Mag.*

WHERE MOSQUITOES COME FROM.

A writer on entomology, discussing about these summer pests, thus handles the subject:

"The mosquito proceeds from the animalcule commonly termed the 'wiggie tail.' I took a bowl of clean water and set it in the sun. In a few days some half-dozen wiggie-tails were visible. These continued to increase in size till they were about 3-16ths of an inch in length. As they approached their maturity they remained longer at the surface, seeming to live in two mediums—air and water;—finally, they assumed a chrysalis form, and by an increased specific gravity, sank to the bottom of the bowl. Here, in a few hours, I perceived short black furze, or hair, growing on every side of each, until it assumed the form of a minute caterpillar. And thus its specific gravity being counteracted, or lightened, it readily floated to the surface, and the slightest breath of air wafted it against the side of the bowl. In a very brief space of time afterwards, the warm atmosphere hatched out the fly, and it escaped, leaving its small tiny house upon the water. How beautiful, yet how simple!

After the water had gone through this process, I found it perfectly free from the animalcule. I therefore came to the conclusion that this wiggie-tail is a species of the shark, who, having devoured whole tribes of animalcule, takes to himself wings and escapes into a different medium to torture mankind, and deposit eggs upon the water to produce other wiggie-tails, who in turn produce other mosquitoes.

FRUIT CULTURE.

For the Arator.

Is it true that we *cannot* produce as good fruit as is grown at the North? Why do we not then? Simply because we merely plant trees and expect nature to do the rest. Good fruit, like good corn, requires cultivation, and cannot be had without it. Yet, cultivation, even, cannot make certain kinds valuable: and hence, it is necessary that great

care should be taken to select such varieties, as are flavored well and suited to our climate. It will not do to consult Downing or Thomas or Elliott, as to the sorts which we should plant, because those which they recommend, are adapted to a colder climate than ours. Southern seedlings and those which are known to be good at the South, are, in the main, the only fruits which should be cultivated. This is true not only in regard to apples, but to peaches, quinces, cherries, plums, and pears.

It has often been said that it was just as easy to raise a good fruit as a bad one: and hence astonishment has been many times expressed, that people should have the common Dawson instead of the Orange or Imperial Gage Plum, the Castor Crab instead of the Harvest or Yellow Bellflower apples, and the common choke pear, instead of the Bartlett or Seckel. It is true that the sprouts and wildings which spring up in fence corners, cost nothing in the way of direct outlay, but a prudent cultivation will prove that they are the most expensive after all. A bushel of Bullock's Pippin is worth a cart load of common apples. Besides the extremely low prices at which the Lindleys and Fentress sell their fruit trees brings them within the economical reach of all persons.

I do not profess to know *all* about fruit or even *half* so much as some others. I have had a little experience in it, however, and in consequence of this and my desire to see our people pay more attention to it, I propose to make a few remarks upon the subject. If I can only call their minds to it, I shall accomplish, I am sure, all I want.

In planting an orchard, the first great consideration is to select for cultivation *good* fruit only. If the planter is unacquainted with the qualities of the different varieties to be had in our nurseries, let him depend upon the character of the pomologist and take such as he will recommend. Such was my course, and in confiding the selection to J. & T. Lindley, I acted wisely and safely, as my experience has taught me. In order, however, to assist in making a selection, I shall name a few kinds which I *know* to be worthy of cultivation. Of apples, the Red June, Harvest, Buckingham, Maiden's Blush, Hall, Green Cheese, Pryor's Red, Vandervere, Yellow Bellflower, Foust, Bullock's Pippin, Winter Spice, Ortley and Limbertwig. The Never-fail, or Raule's Janet, the Male Code, and others, are highly recommended. I have eaten Pryor's Red in January, grown on strong soil, as far south as the parallel of 35°, and found it to be the best of apples. The Ferdinand and Aromatic Carolina, both natives of the south, are said to be excellent

I have them, but they have not fruited.

In regard to Peaches, we have so many that are good that I hardly think it necessary to mention them specifically. The Heath is a *very* good peach—according to my taste *the best*. Besides this, the Barington, Cole's Early, Indian Cling, Tippecanoe, and Yellow Alberge may be safely recommended.

Of Pears, the Bartlett, Seekil, Louise Bonne de Jersey, Duchess, d'Angoulême, Beurre Easter, Beurre Diel, Glout Morcéau, White Dean, Van Mons Leon le Clerc and winter Nelis, are fine. Some of these are standards, but they are in the main dwarfs. The latter I prefer, on account of their early coming into bearing. Some, however, will not succeed grafted on the quince; and these must of necessity be standard, or full sized pear growth.

Of Cherries, I will name the May Duke, Black Tartarian, Belle de Choisy, Elton, Amber Bigarreau and White Tartarian.

Of Plums, the Washington, Jefferson, Imperial Gage, Green Gage, Orange, Coc's Golden Drop, Prince's Yellow Gage and Purple Favorite, are highly esteemed by those who have tried them.

I shall not speak of Strawberries, Raspberries, Currants, Figs, Apricots, Nectarines, Goosberries or Grapes, though all are worthy of attention. In my next (unless I change my intention,) I shall make a few suggestions in regard to culture.

AMATEUR.

From among a host of complimentary letters from our most enlightened farmers, we select and publish the following, because the one calls the attention of the young and inexperienced farmers to our work—a numerous class, who may be much benefitted by agricultural reading; and the other shows how one who labors under difficulties, is nevertheless determined to read and persevere in the work of improvement—furnishing an example worthy of universal imitation.

GATES Co., July 5, 1855.

T. J. LEMAY, ESQ.,—*My Dear Sir*:—I have received the three first numbers of your valuable agricultural paper, the "Arator," and take great pleasure in saying it is not only valuable, but should find its way to every Farmer in the Old North State. It contains very useful and instructive matter, particularly for young and inexperienced farmers, and is indeed a very interesting publication, for all. I shall take great pleasure in aiding its circulation in my region of country. Below I have the pleasure of giving you a list of subscribers I have procured. I am authorized to say upon the receipt of the next number a remit-

tance will be made of each one's subscription by the Post Master at Buckland, with whom the arrangement has been made. Wishing you much success in your valuable undertaking, in promoting the agricultural interest of our good old State, I am very respectfully your

Obedient serv't,

J. D. P.

CHINA GROVE, May 26th, '55.

MR. T. J. LEMAY—*Dear Sir*:—You had the goodness to send me two numbers of your valuable periodical, (The Arator,) which I have examined, and must say in candor, that so far as my information reaches, I think it the very thing for North Carolina, as it is replete with matter that will suit (or ought to) every sensible farmer; and I hope the day is not far distant when your subscription list will be doubled and trebled. I shall try my brother farmers and see if I can awaken them up, for certainly we have been napping it long enough.

The loss of one of my eyes and the other very bad, renders it exceedingly difficult for me to read much, but if God spares me the one I have, I expect to read it and try and profit by it.

Enclosed you will find one dollar, the subscription money, and I hope you will send it on as long as I can read. Address, China Grove.

Very respectfully, I remain your
Obedient humble serv't,

R. H.

[To the Editor of the Arator.]

HENDERSON, N. C., 27th June, '55.

We are in North Carolina evidently far behind a good many other States in agriculture, and I know of no other way better calculated to arouse our farmers out of their lethargic State, and give them the required information, than the extensive circulation of an agricultural journal; as some paper of the kind should be read and studied by every tiller of the soil; and ere long, instead of the present sterility of the most of our land, North Carolina might very justly be styled the garden spot of the world. I propose subscribing for fifty or one hundred copies of the Arator or Cultivator, to be given out as premiums at the coming Fair to our farmers, and should like to see the same course adopted by other county Fairs, also by the State Fair.

Yours truly,

GEO. W. BLACKNALL.

Chim Ex. Com. Granville Co. Agricult'l Society.

[From the Ohio Farmer.]

HOW MUCH SEED MUST I PLANT, OR SOW? GARDEN SEEDS.

The following is an estimate of the quantities of different kinds of garden seeds, required to produce a certain number of plants, or to plant a certain quantity of ground :

ASPARAGUS—One ounce will produce about 1,000 plants, and requires a seed bed of about twelve square feet.

ASPARAGUS ROOTS—1,000 roots will plant a bed four feet wide, and from 200 to 250 feet long, according to the distance apart the plants are placed on the row.

BEANS, *English dwarf*—One quart of seed will plant from 100 to 150 feet of row, according as the sorts may be early or late.

BEANS, *French dwarf*—One quart will be sufficient for about 350 hills, and the same quantity will plant from 250 to 300 feet of row.

BEANS, *Pole*—One quart of Lima, White, Dutch, or Scarlet runners, will plant about 100 hills. Of the smaller sort, one quart will plant about 300 hills, or 250 feet of row.

BEETS—When sown as gardeners generally sow, it requires at the rate of ten pounds to an acre; one ounce will suffice for about 150 feet of row.

BROCOLI—One ounce will produce about 2,500 to 3,000 plants, and requires a seed-bed of about forty square feet.

BRUSSELS SPROUTS—The same as Brocoli.

CABBAGE—Early sorts the same as Brocoli; the late and Savoy sorts will require a seed-bed of about sixty square feet.

CAULIFLOWER—The same as the later sorts of Cabbage.

CARROT—Three to four pounds are required to an acre, and one ounce will sow about 200 feet of row.

CELERY—One ounce of seed will produce about 7,000 or 8,000 plants, and require a seed-bed of about eighty square feet.

CUCUMBER—One ounce of seed will be required for about 150 hills.

CURLED CRESS—One ounce of seed will sow a bed containing sixteen square feet.

EGG PLANT—One ounce, if properly managed in the seed-bed, will produce from 2,500 to 3,500 plants.

KALE—The same as Brocoli.

ENDIVE—One ounce will produce about 3,500 plants, and require a seed-bed of about eighty square feet.

LEEK—One ounce produces about 2,000 or 2,500 plants, and requires about sixty square feet of seed-bed.

LETTUCE—One ounce will require a seed-bed of about 120 square feet, and will produce 6,000 or 7,000 plants.

MELON—One ounce will be sufficient for about 120 hills.

NASTURTIUM—One ounce will sow 25 feet of row.

ONION—From four to five pounds are required for an acre, when raised for the bulbs; one ounce will sow about 200 feet of row.

OKRA—One ounce will sow about 200 of row.

PARSLEY—Six or seven pounds are required to the acre; an ounce will sow about 200 feet of row.

PARSNIP—From four to five pounds are generally sown per acre; an ounce will sow about 250 feet of row.

PEPPERS—One ounce will produce about 2,000 or 2,500 plants.

PEAS—From one to two bushels are required to an acre; one quart of the smaller sorts will sow about 120 feet of row, and of the larger sorts, one quart will sow about 200 feet of row.

PUMPKIN—One quart of the common field sorts will plant from 500 to 600 hills, and of the finer garden sorts, one ounce will plant about fifty hills.

RADISH—From twelve to fourteen pounds of the early spring sort are required to the acre, if sown broadcast; but half that quantity is sufficient, if sown in drills. Of the latter sorts, five pounds to the acre, in drills, are sufficient. One ounce will sow about one hundred square feet.

SALSIFY—From five to six pounds are generally allowed to an acre. One ounce will sow about 150 feet of row.

SPINAGE—Cultivated in drills, from seven to eight pounds to the acre are sufficient; if sown broadcast, double that quantity. One ounce will sow about 200 feet of row.

SQUASH—One ounce will plant from fifty to eighty hills, according to the sorts and size.

TOMATO—One ounce will produce about 2,000 or 3,000 plants, and require a seed-bed of about eighty square feet.

TURNIP—From one to two pounds are generally allowed to an acre; one ounce will sow 2,000 square feet.

WATERMELON—One ounce will plant from forty to fifty hills.

For the Arator.

WEEVIL IN WHEAT.

Keep them out. This is done by getting out your wheat when perfectly dry, and as early as possible, (at least in July) and then by mixing through the grain leaves of the common elder bush. I have tried this plan with uniform success for upwards of twenty years. Or, if you will let the wheat remain in the chaff, the weevil will rarely touch it.
B.

USEFUL RECIPES.

DIARRHŒA.

The True American says: "A friend of ours suggests that a strong decoction of strawberry leaves, taken in frequent moderate portions, acts as a powerful astringent. Of our own personal knowledge, we know this to be a fact; and just now, while bowel complaints are seasonable and rife, it will be well for heads of families to remember it. The tea is not unpalatable, quickly and easily procured, and may save expense, suffering and life."

Those who have not access to medical advice and other well tried and better remedies, may probably, find relief from the above.

TO PRESERVE HAMS IN HOT WEATHER.

The best way to preserve hams during hot weather, is to sew them up in stout cotton bags, cover them with charcoal dust in barrels, and keep them in a dry cool place.

WORTH A TRIAL.—It is said that seed corn, soaked in soap over night, and rolled in plaster before planting, will not be disturbed by hens or crows.

TO TAKE OUT BRUISES IN FURNITURE.—Wet the place well with warm water, then take some brown paper folded five or six times, and well soaked in water, lay it on the place, and apply a hot flat-iron till it is dry. If the bruise remains, repeat it till it is raised to the surface.

TO RESTORE THE ELASTICITY OF CANE-SEAT CHAIRS, &c.—Turn up the chair, and with hot water and sponge wash the cane work well; if necessary, add soap. Let it dry in the air, and it will be tight and firm as new.

TO REMOVE INK SPOTS FROM MAHOGANY.—Apply spirits of salt, with a sponge, till it disappears, then rinse with clean water.

WAYS OF COMMITTING SUICIDE.

Wearing thin shoes on damp nights in rainy weather.—Building on the "air tight" principle.—Leading a life of enfeebling, stupid laziness, and keeping the mind in a state of unnatural excitement by reading trashy novels.—Going to balls through all sorts of weather in the thinnest possible dress. Dancing till in a complete perspiration and then going home through the damp air.—Sleeping on feather beds in seven by nine bed rooms.—Surfeiting on hot and very highly stimulating dinners.—Beginning in childhood on tea and going from one step to another, through coffee, chewing tobacco, smoking and drinking.—Marrying in haste, getting an un congenial companion, and living the rest of life in mental dissatisfaction.—Keeping children quiet by teaching them to suck candy.—Eating without time to masticate the food.—Allowing love of gain to so absorb our minds, as to leave no time to attend to health.—Following an unhealthy occupation because money can be made by it.—Tempting the appetite with niceties when the stomach says no.—Contriving to keep in a continual worry about something or nothing.—Retiring at midnight and rising at noon.—Gormandizing between meals.—Giving way to fits of anger.—Neglecting to take proper care of ourselves when a simple disease first appears.

HOW TO MEND A CHAIN PUMP.

If the chain parts, it is difficult getting one end over the lower pulley and up to the other side unless you take up the pump to do it.

Take a strong string of sufficient length to reach from the bottom of the lower pulley to the surface of the water in the well; tie a cork to one end of it and tie the other to the chain. Then winding the string round the cork, put it into the tube and let the chain follow it down. As soon as it gets down under the pulley, the cork will rise to the top of the water in the well, from which it may be hooked up. The chain will be hauled up by the string, and the two ends may be fastened together in the usual way.

ROSE WITHOUT A THORN.—There is in the garden of B. B. David Esq., in this village, a floral curiosity, being a perfectly formed rose growing upon an apple tree and upon a natural limb. There is also a similar bud on the same limb, notwithstanding the tree had been out of blossom a week.

[*Farmer's Cabinet, Amherst, N. H.*]

RALEIGH, N. C. AUGUST, 1855.

WHAT EVERY POOR MAN MAY DO.

We had the pleasure, on the 25th ult., to visit Mr. GULLY, an old and respectable farmer residing about six miles from this city, and were highly gratified to witness the evidences of industry, good management, abundance, and contentment, which his snug little farm, neat dwelling, thrifty looking stock, &c., presented; which, after partaking of an excellent breakfast prepared by his wife and daughter, we walked "round about" and surveyed. He has only fifty acres of land, located on a stony pine ridge, originally thin and poor; about twenty acres of which are now in corn and peas, well cultivated, looking very fine and flourishing, and will average probably three barrels to the acre. Besides this, there is a fine sweet potatoe patch, a melon patch, a good garden, and promising young orchard. He is an advocate for breaking, but not turning, the ground deep. He says his thin, sandy land will not bear being turned up; hence he cultivates with the coulter and cutter. His cart and tools are all kept in place and good order under shelter. He has raised a family of several very respectable sons and daughters, but as his sons have all become of age and left him, he has no person to work in the field but himself; and though at an advanced age, he continues to make an abundant support; and the frequency of the appearance of his cart at the market, sufficiently attests the fact that he always has a considerable surplus to sell. He has four or five cows giving milk, which are a source of handsome profit by the sweet and excellent cheese and butter made from them by his wife and daughter. He attends well to his hogs, and usually has a surplus of pork also for market. There were exhibited on every hand, system and neatness, with an air of comfort and cheerfulness, which told that plenty and contentment were there.

How many hundreds and thousands of poor men with families, who are existing upon half starvation from year to year, are there congregated especially about our towns and villages, who, if they would exert the prudence, industry and energy which they have the capacity to exercise, might go and do likewise—follow this noble example—get fifty acres of land, (which, if no better than Mr. Gully's may be had in many sections for less than fifty dollars,)—make an abundance for the comfortable support of their families; and, after getting a start, lay up something every year for the wants of age and infirmity.

There are many in this city, whose wives and

children are suffering for the want of food and raiment, who, if they remain here, are doomed to drag out a miserable and useless existence, but who, by procuring such a homestead in the country and going to work in the right way, might soon become respectable, useful and happy citizens. This is a subject which demands the serious consideration of the statesman and philanthropist. Where industrious and worthy poor men are found struggling for a foothold, every encouragement and assistance, from public and private bounty, should be freely bestowed.

THE PEA FOR HOGS AND AS A RENOVATOR, &c.

We thank our esteemed correspondent "S." for his valuable communication, on this subject, which enriches the present number of the Arator. It will be read with interest and profit by our readers generally, as well as by our Granville correspondent, to whose inquiry it is an answer; and we hope to hear from S. often. He has much valuable information on many subjects interesting to the farmer, which his genuine patriotism and enlightened zeal for the advancement of the cause of improvement in the Old North State, will, we trust, prompt him to present to the public in our pages.

We call special attention likewise to the communication of "Amateur" on fruit raising, which is from a highly intelligent and respectable source. If we succeed in setting to work and keeping employed a few more such pens in different sections of the State, our object will be accomplished—our people will every where be aroused—the work of improvement will be steadily and rapidly advanced—and prosperity, happiness and contentment will find their home and abiding place beneath the bright blue sky of North Carolina.

We invite and urge her patriotic sons to this great and noble work. The Premium list in this number suggests topics. What a vast field and endless variety it opens to the mind and heart of the patriot, the statesman and the philanthropist! Again we say, write—write to arouse the people to action.

Guano, and Farmers' and Planters' General Agency.—We call the attention of our readers to the Card of Messrs. S. SANDS & WORTHINGTON, Publishers of the American Farmer, Baltimore, Md., which will be found in this No. of the ARATOR. It will be seen that they have established an agency in Baltimore, and made such arrangements as will enable them to furnish Guano on much better terms than it can be procured any where else.

They will deliver it, by the single ton, at \$52 a ton of 2240 lbs., free from all other charges, on any wharf or rail-road in Baltimore; whilst Government prices range from \$50 to \$53, according to quantity taken—the lowest prices requiring the purchaser to take over 1,250 tons. Those who intend to use the article, would do well to apply before the first of Sept., as we learn from a reliable source, that there is reason to apprehend a change to higher rates will then be made. They will find it to their interest, also, to order it from Messrs. Sands & Worthington, because they will not only get it at \$5 less, (including charges, &c.) but a long ton—of 240 lbs. more than when purchased of other dealers; and, what is still more important, may rely upon getting a genuine, unadulterated article.

WORK FOR AUGUST.

Heretofore, in North-Carolina, August has been a kind of holiday month with the farmers because the corn and cotton crops were generally "laid by" early in the month, and little else than grubbing and hacking followed until the time for gathering fodder came on: but a great and important change has taken place, and circumstances are widely different in many, and, we hope, will soon be so in all sections of the State. Now, the laying down of the plow and hoe is the signal for the taking up of the spade and shovel and cart—for collecting materials for the compost heap—a work of paramount importance in the system of improvement which is to renovate our worn-out lands and place North-Carolina in the fore-ground of the great agricultural States of this mighty Republic. Let, then, every farmer and planter, large and small, adopt the system at once, and go at it with a firm resolution and patient perseverance which march onward, and onward, "from conquering to conquest," until, having surmounted every obstacle, success shall crown the bloodless triumph—until Ceres shall become our presiding goddess, and, from her capacious *cornu copia*, scatter every where, to every inhabitant, in bountiful profusion, the rich and varied products of the fruitful earth.

But this is the *first* of the month, and the cultivation of our crops is not yet completed.

The late Corn, probably, needs another plowing. If so, hasten its completion, and, in the language of our elder cotemporary, the Georgia, or "Southern Cultivator," let it be carefully "finished with the surface open, mellow and free from weeds." Much more depends upon leaving the corn in this condition, when it is about tasseling, than many careless farmers imagine.

The Cotton is rather more backward than usual, and in some instances, it may be necessary to *sweep* it over. Let this work also be done well, and without delay, to destroy all the weeds and grass, and leave it in good condition for clean picking, which should be commenced as soon as the bolls begin to open freely.

Turnips may be sown from the first to the last of this month, but the main crop should be in by the 14th. The Ruta Baga, the most valuable for stock, but little cultivated among us, should have been seeded from the 20th to the last of July; but it will come if sown early in this month. For the mode of cultivation, see an article on "Turnips" in another part of this number of the Arator.

Sweet Potatoes.—It would pay well to go over the field, loosen the vines where the runners are taking root this rainy weather, and scrape out the weeds and grass, giving the vines a chance to take full possession of all the ground. Our Georgia coadjutor strongly recommends the "cutting and setting out vines for the production of next year's seed."

Hay.—A great deal of good hay may be saved in low, flat, uncultivated places, outside of the regular meadow, which would help out in a long, lingering winter.

Ditching and Draining.—This may be a favorable month for many to commence the important work of hill-side and drain-ditching their lands. If all cannot be accomplished in the month, much that is highly necessary may be done; and every opportunity should be embraced to prosecute both branches of this work until every farm shall be secure from washing, and shall have all its flat and swampy lands brought under cultivation.

Clearing.—Let as little of this as possible be done except the clearing up of branches, creeks and swamps overrun with briars, brambles and bushes, within your enclosures. But put your whole clearing force upon the work of

Collecting Materials for the Compost Heaps, to Improve instead of Clear.—This is a work of the greatest importance to every tiller of the soil, and should be adopted and commenced, and henceforth vigorously and perseveringly prosecuted, as a *system*. The worn and impoverished condition of much of our valuable land, imperiously demands it; the success of our Edgecombe farmers, who have tried it for years, demonstrates its virtue in improving the quality and value of land, and in establishing prosperity, independence and happiness where adversity, poverty and discontent reigned before; it has been delayed too long by the

farmers of other sections; and there is an additional very strong and pressing reason (if other reasons were necessary to bring our people to a sense of their interest,) why it should *now, forthwith*, be commenced. It is this: the abundant and fertilizing rains which have every where been showered upon our growing crops, are producing a luxuriant growth of vegetation and taxing the strength of the soil to an unprecedented extent. We may rely upon it, if the labors of the husbandman are crowned with a superabundant harvest, the land which yields it will be unusually impoverished by the extraordinary effort. Its fertility will be exhausted in proportion to the amount of nourishment it gives to the crops taken from it; and moreover, there have been many *washing* rains during the season, which have carried off much of the *cream* of the soil from valuable fields which were not protected by judicious hill-side ditching and horizontal cultivation.

All this must be restored, and provision made to guard against losses and damages that may be prevented, in future, as well as to keep up a gradual and constant improvement of our lands. To this end, let all your disposable force be now directed to hauling muck, rich earth and leaves from the woods, ditch-banks, scrapings from the corners of the fence and road-side, weeds and all kinds of collectable green substances, as well as animal manures, to the *Compost Heaps*. Let these heaps be large and numerous, located at convenient points in every field, to pay back what the present crops take from the land, with usury. Now is the time to make rich compost heaps, without the necessity of resorting to foreign fertilizers. Supply your heaps with a large proportion of green vegetable matter, suffered to lie in bulk until the process of decomposition commences before composting—give every layer of your pile a liberal sprinkle of ashes, and work in it as much stable, hog-pen or cow-pen manure as can be secured—then cover the whole deep with earth taken from the base of each mound—and a manure rich in every substance that the soil requires will be formed. We shall not have to recommend and urge this plan again upon those who will once give it a fair trial: one year's experience will be sufficiently convincing.

Cutting and Curing Corn, Stalks and all, instead of pulling the Fodder.—This is earnestly recommended by the Georgia Cultivator, especially to small planters. The plan is, "to cut up the corn stalks at the ground, as soon as the ears begin to glaze or get hard: set up in shocks every 20 or 30

hills thus cut; and when the whole is perfectly dry, haul under cover, or carefully stack up; strip off the ears at your leisure, and save all the stalks, blades and shucks for the winter feeding of stock." The advantages of this plan are considered to be, 1st, the saving of more rough food, since the stalks thus saved will be more valuable than the blades, its surplus starch, gum and saccharine matter being preserved, instead of being changed to hard and woody fibre, as when the plant is allowed to stand until it becomes perfectly dry and deadripe; 2ndly, the grain matures with less loss than when the fodder is stripped from the stalk; 3rdly, it saves labor; and 4thly, the ground is ready earlier for sowing small grain. This plan is universally pursued in the mountains of Virginia, because corn is comparatively a small proportion of their crops, and they find it to their advantage to save every portion of the plant, as well as to clear their fields early for wheat; and why may it not be practiced here with the same advantages! Our only doubt is, as to whether the grain will be as perfect, sound and heavy as when suffered to stand in the hill. Its advocates think it will, and be heavier than when the fodder is pulled prematurely, as is the case generally. There can be no great risk in trying it on a portion of our present crops; and if satisfied with the result, the practice may be continued.

THE GARDEN.

All plants of the Cabbage family may be set out for winter use. We have raised first rate winter greens from seed sown in August. Beets, Radishes, Turnips, Lettuce, Spinach, may all be sown. Irish potatoes will come, if planted early this month, and will be the better if mulched heavily with straw or leaves. Keep the hoe active, and exterminate all weeds and grass. We quote the following from the Georgia Cultivator for the month: "Keep your *Strawberry Beds* clean, open and mellow now, if you desire to increase your plants, and encourage the growth of runners by an occasional showering with soap suds. If you do not want runners, cut them off and turn them under, to give back their substance to the bearing plants. Give these occasionally a light top dressing of leached ashes just before a shower, or water them with a *very weak* solution of potash.

THE ORCHARD AND NURSERY.

"*Peach, Nectarine and Apricot* trees may be "shortened in" or cut back one-half of this year's growth, where the frost has destroyed the fruit; but where the trees have borne or are heavily la-

den, this operation may be deferred until October. *Budding* of all stone-fruits may still be continued, by those who adhere to this back-breaking and head-aching practice. Insert the bud on the north side of the stock, early in the morning, or just before night-fall, ceasing operations in the heat of the day."

THE FLOWER GARDEN.

"Collect seeds of all *Annuals*, and preserve them carefully. Bud *Oranges* and *Lemons*. Propagate *Aloes* and the *Cacti* (or *Cactus*) by slips. Sow *Bulbous* rooted flower seeds to obtain new varieties. Stake your *Dahlias* and thin out the flowers, if too profuse. Clip *Box* edgings in moist weather. Cut and roll *grass plats* and *lamns*.—Water your potted *Annuals* and other plants daily, in hot weather. Sow *Tulip* and other bulb seed. Gather all valuable seed as soon as ripe, and save for future use. Use *water* and *weak liquid manure* frequently, as heretofore directed."

IVERSON RESCUE GRASS.

Though there is a diversity of opinion in regard to this grass, and many regard it as a great humbug, it nevertheless, from the testimony of respectable farmers, appears to be very valuable. Mr. John Rucker, of Lynchburg, Virginia, says, in the *American Farmer*, that he has tried and found it to be "superior to any and every kind of grass he has ever seen." "A Subscriber," at Forestville, N. C., in the same paper, who sowed a peck on a third of an acre, last September, made $9\frac{1}{2}$ bushels of seed, beating both his wheat and oats, and making first rate hay. He thinks it cannot be surpassed, "either for hay or grazing." Mr. Sylvester Smith, of this city, also esteems it highly, having made $17\frac{1}{2}$ bushels on about one-fourth of an acre, from half a bushel of seed, which came up badly, sown last September.—Mr. A. J. Summer, of South Carolina, in the *Southern Cultivator*, says, "my rescue grass, and also that of several of my friends, has come up to all that Mr. Iverson claims for it."

PLOWS, &c.

We introduce to the notice of our readers, below, a valuable plow, which every farmer should have, for turning the sod; also, a cotton sweep and scraper, which should be used on every plantation, manufactured at the extensive establishment of Messrs. Ruggles, Nourse, Mason & Co., Boston. We shall present others hereafter. Our agriculturists have been too slow in adopting improved implements; but a spirit is abroad now, which, we trust, will speedily lead to a different policy, and that we shall soon see the best system of culture and the best implements, prominent on every farm in the State.

SOD PLOW.

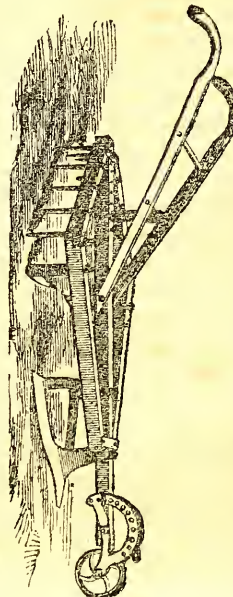


Fig. 2. Plow No. 33—Sod.—The mould-board is trimmed with fixtures for sodplowing. With wheel and cutter, it is well adapted to the working of that class of heavier loams, in grass, which, not so stiff and unyielding, nor requiring so narrow plowing as heavy clay soil, yet need a considerable disintegration of the furrow slice in the act of plowing. It also suits grass land that is stony & of uneven surface. Its mould-board gives a short, powerful but equal twist to the furrow-slice, finely disjoining its particles, & leaves the plowed land

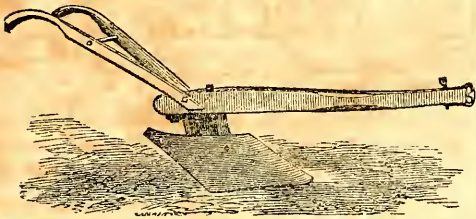
in a mellow condition, susceptible of fine tilth. It is a two horse plow, working five to eight inches deep, and 11 to 13 inches wide, and lays lapped or flat furrows, by the use of a perpendicular cutter for the former, and an inclined cutter for the latter kind of work.

COTTON SWEEP.

This represents an implement much approved for the cultivation of cotton, in sections where it has been introduced. Two sizes. The forward triangular share or sweep cuts or works the ground 14 & 18 inches wide, the next succeeding teeth are a flat bar of iron with the forward edge sharpened and turned inward at the bottom, and level with the share or sweep in such a manner as to cut to the point marked by the sweep and thus making a clean cut of 24 and 32 inches, more or less deep, when the small pointed harrow teeth follow, and more perfectly pulverize the soil, and work the weeds to the top in such a condition as to be readily killed by the sun. It is expanded and contracted at will.



COTTON SCRAPER.



This represents an improved Cotton Scraper, the importance of which every planter understands, and appreciates its advantages at the first working of the cotton. The improvements to this implement were made at the suggestion of George W. Sizer, Esq. who keeps an extensive agricultural ware house in New Orleans, and by whom it has been introduced to a large number of planters, who have expressed their entire satisfaction, and given liberal orders. It is made of either wrought or cast iron, is strong, durable and cheap.

WESTERN EXTENSION—CHARTER SECURED.

We are highly gratified to learn from the Republican Banner, that, at the Convention held in Salisbury, on the 25th ult., the requisite amount of stock to secure the charter of the Western North-Carolina Railroad Company, was subscribed. It was reported by a committee that the sum of \$7,300 dollars was lacking; upon which a resolution was unanimously adopted, declaring the Convention in permanent session, determined to sit from day to day until the charter was secured. The next morning, citizens of Rowan promptly and patriotically came forward and made up the deficiency, (being then about fifty-five thousand dollars;) which was received with the most rapturous applause. This is a great and noble work, and will tell gloriously upon the future destiny of the State.

THE CROPS.—The rains have been abundant throughout the past month, and the crops in this vicinity, and, we learn, in every part of the State, promise a rich and almost unprecedented reward to the labors of the husbandman. The chinch-bug has made its appearance in some places in this county; but the vigor of the corn defies its attacks, though its name is *legion*. There is, however, too much rain for cotton.

The price of all kinds of produce has greatly fallen since our last, and appears to be coming down to living rates again. We see it stated that some one at the North has engaged a large quantity of Irish potatoes at 15 cents a bushell!

VISIT TO MAJOR COLLINS' MILL.

Though we have passed the time for "rocking the cradle and nursing the baby," yet we take our turn at almost every other kind of domestic duty. We set type and write for the Arator; direct, pack

and sometimes carry the paper to the Post-Office; hoe the garden, plow the field, feed the pigs and go to mill. In attending to this last named business about two weeks ago, we visited the splendid Merchant Mill of Maj. COLLINS, in this vicinity, and had the pleasure to find the Major at home, who showed us through all the departments of his Mill, which is built, at great cost, upon the most approved plan—the house of brick—furnished with the best machinery and ample water power—making it equal, if not superior, to any mill of the kind we have ever seen. The public are under obligations to the enterprising proprietor, for rearing in our midst this valuable establishment. Having examined the Mill, we were conducted by the Major through his garden and pea field, and were surprised to find he had ripe, dry field peas, which he had been eating for a fortnight—a valuable early pea, hardy and prolific, exactly suited for giving pork hogs an early lift and affording improvement to our worn-out lands, by turning under two crops the same year. We were also struck with the variety of rare vegetables and fruits with which the garden abounded. The Irish potatoes were unusually fine and abundant. One hill—the Mamance variety—was dug in our presence, and yielded thirty potatoes, some of them very large, and all of them of sufficient size for the table.—They were planted without manure—the soil is rich—was well broken with the plow—trenches were then plowed out by running two furrows therein with a turning plow, the loose dirt scraped out of the bottom, the potatoes dropped and covered with wheat straw that had been a little trampled, and the dirt thrown back upon the straw.—They required but little trouble afterwards, having received, perhaps, but a single plowing, and weeding until the vines possessed the ground.

Wilmington, ever foremost in works of improvement, has decided to subscribe \$200,000 to the Wilmington, Charlotte and Rutherford Railroad, by a vote of 531 to 103—more than five to one.

John W. Norwood, Esq., of Hillsboro', will deliver the Annual Address before the Orange County Agricultural Society, on the 26th of October.

The Wilmington Herald states that Gov. Bragg has appointed Gov. Swain, under a resolution of the last Legislature,) to proceed to London to procure documentary evidence touching the ante-revolutionary history of this State.

SOUTHERN CULTIVATOR.

We are happy to enter this able and valuable journal on the list of our exchanges. The August number has been received, and is running over with interesting and useful matter suited to our Southern latitude. It is published in Augusta, Georgia—Daniel Lee, M. D. and D. Redmond, Editors; Wm. S. Jones, publisher. Price \$1 a year, in advance.

THE WORKING FARMER.

We hail with heartfelt pleasure, the appearance, on our table, of this able and interesting periodical. The June and July numbers come richly laden with every thing that tends to interest, improve and elevate the farmer. The work is beautifully printed, in New York, monthly, at \$1 a year.—Prof. J. J. Mapes, Editor; Mr. F. McCready, Publisher.

We regret that the Circular of Messrs. S. Sands & Worthington, referred to in another place, is crowded out of this number.

Liberia has ten thousand emigrant population, and two hundred thousand native.

A druggist in Cincinnati has been fined \$20 for selling soda water on Sunday.

The Common Council of Buffalo has prohibited shaving on Sunday. In Rochester a similar prohibition is in force.

Somebody says, very beautifully: "As the small planets are nearest the sun, so are little children nearest to God."

MARKETS.

RALEIGH.—Corn, 85 @ 90; Bacon Hams, 13 @ 15; Hoground, 12 @ 12½; Flour, \$ 7¼ @ 8 per load; Meal 90c @ \$1.00; Fodder, 90 cts @ \$1 00; Oats, clean, 00 @ 00; Butter, 20; Lard, 12 @ 13.

FAYETTEVILLE.—Corn, \$1 @ \$1 00; Bacon, 12 @ 13; Cotton 9½ @ 10; Flour 6 75 @ 7 50.

WILMINGTON.—Bacon, 13; Cotton, 10 @ 10½; Turpentine, yellow dip, \$2 35, Hard, \$1 75; Spirits, 39c.

PETERSBURG.—Bacon, western sides and shoulders, 11 @ 11½; Cotton, 10 @ 10½; Corn, 1.00 @ 1.00; Flour, 9 @ 11*; Tobacco, hogs, 5½ @ 7½; leaf, 7½ @ 12½; Wheat, \$1 70 @ \$1.90; Mexican Guano, \$35; Peruvian ditto, \$55.

NORFOLK.—Bacon, hams, 12 @ 13, hog round 11½ @ 11½; Cotton 9¼ @ 10½; Flour, 9½ @ 11½; Spirits Turpentine, 40 @ 41.

* This quality Flour is manufactured at the city mills, and is considered a very superior quality of Family Flour, which accounts for its extra high price. The prices are regulated by the grades "midling," "fine," "superfine," "extra," and "family flour." It is a rare thing that any, except "city mill" flour, ever reaches the grade of best "family."

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY,

PUBLISHER,

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF Theological, Law, Medical, Classical, Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE, French, English and American Perfumery,

Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes, SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds, Spices, Snuffs, Manufactured Tobacco,

All the Patent or Proprietary Medicines of the Day, SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes, Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

LIST OF PREMIUMS

TO BE AWARDED AT

THE UNION AGRICULTURAL FAIR,

To be held in Henderson, N. C. on the 10th, 11th and 12th October, 1855.

Branch 1st.—Live Stock.

FIRST DIVISION.

FIRST CLASS.

For the best stallion over 4 years old, }	\$4 & Arator or
2d do do do }	Cultivator.
Best brood mare	2 A. or C.
Do colt over 2 years and under 3,	2 A. or C.
Do do do one and under two,	1 A. or C.
Do do one year old	A. or C.

In this class, purity of blood, form and size will be taken in consideration.

SECOND CLASS—*Harness, Draft and Saddle Horses.*

For the best saddle horse	\$3
Do fastest pacing do	1
Best pair carriage horses,	\$3 & A. or C.
2d do do	1 and A. or C.
Do single harness horse	\$2
Fastest trotting do	1
Best lot farm horses, not less than 3,	3 and A. or C.
Do heavy draft horse,	2 and A. or C.

In this class, form, durability and kindness in harness, are to be chief points of merit.

JACKS AND JENNETTS.

For the best and largest Jack,	\$4 and A. or C.
do do Jeunett	1 and A. or C.

MULES.

For the best pair mules	2 and A. or C.
do single mule	A. or C.

SECOND DIVISION.

CATTLE.

For the best bull over 3 years old,	\$3 and A. or C.
do do under do do	1 and A. or C.
do milch cow	3 and A. or C.
2d do do	A. or C.
do heifer three years old,	2 and A. or C.
do do two do	1 and A. or C.
do pr. work oxen	2 and A. or C.
do heifer calf under 2 yrs old	1 and A. or C.
do bull do do do	1 and A. or C.

THIRD DIVISION.

SHEEP.

For the best buck	2 and A. or C.
do pen of ewes, not less than 4,	2 and A. or C.
do " lambs, " "	1 and A. or C.

FOURTH DIVISION.

SWINE.

For the best boar of any breed,	\$2 and A. or C.
do breeding sow	1 and A. or C.
do lot of pigs, not less than 6,	1 and A. or C.
do " do " "	3, A. or C.
largest killing hog	2 and A. or C.

POULTRY.

For the best pair of Shanghais	\$1
do do Dorkings	1
do do Polands	1
do do Brahmas	1
do do Game	1
do do Dunghill or common Fowl	1

do do Turkeys	1
do do Geese	1
do do Ducks, muse'y	1
Largest variety of fowls exhibited by one person,	2

Branch 2d—Agriculture.

FIRST CLASS.

For the best sample wheat	\$1 A. or C.
do do Indian corn	1 A. or C.
do do leaf tobacco	1 A. or C.
do do corn fodder	1 A. or C.
do do rye	1 A. or C.
do do oats	1 A. or C.
do do beans or peas	1 A. or C.
do do cotton	1 A. or C.
do do pea vine hay	1 A. or C.
do do grass hay	1 A. or C.
do do sweet potatoes	1 A. or C.
do do Irish do	1 A. or C.
do do turnips	1
do do beets	1
do do earrots	1
do do onions	1

Certificates to accompany these products, stating their yield per acre.

Vegetables of extra quality will each receive fifty cents premium.

For the largest average product per acre throughout the entire crop of wheat, corn, tobacco, oats and cotton, each, \$2 and A. or C.

SECOND CLASS.

FOOD, CONDIMENTS, &c. &c.

For the best sample pickled beef	\$1
do do do pork	1
do lot hams	1
do jar fresh butter over 6 lbs.	1
do jar butter over 6 months old	1
do jar honey	1
do specimen wheat flour	1 and A. or C.
do do corn meal	1 and A. or C.
do do domestic starch	1
do cakes, bread, crackers, &c. each,	50 cts.

For the largest and nicest variety of preserves, pickles, jellies, jams, catsups, syrups, &c. exhibited by one person,

Nicest sample of either kind 50 cts.

Best sample of dried fruits, each, \$1

Largest variety exhibited by one person 1

Best sample domestic wine 1

The mode of preparing each of the above must accompany the article.

THIRD CLASS.

HORTICULTURE.

For the best sample apples	\$1
do do peaches	1
do do pears	1
do do quinces	1
do do figs	1
do do grapes	1
Largest variety fruits exhibited by one person,	1 and A. or C.

FRUIT TREES.

For best variety apple trees	1
do do pear "	1
do do peach "	1
do do strawberry and raspberry vines	1
the largest variety fruit trees exhibited by one person	\$2 and A. or C.

Branch 3d—Mechanics.

FIRST CLASS—PLOWS, &c.

For the best plow (of each kind)	\$1 and A. or C.
do farm gate	A. or C.
do seythe	1

SECOND CLASS.

For the best 4 horse wagon	4 and A. or C.
do 2 do do	2 and A. or C.
do 1 do do	1 and A. or C.
do ox cart and yoke	1 and A. or C.
do wheel-barrow	1
do 2 horse pleasure carriage	4 and A. or C.
do 2 do rockaway or top buggy	2 and A. or C.
do 1 do do do	1 and A. or C.
do 1 do open buggy	2

THIRD CLASS.—MACHINERY.

For the best sweep horse power	2 and A. or C.
do railway do do	2 and A. or C.
do corn and cob crusher	1 and A. or C.
do broadcasting or drilling machine for grain or grass	2 and A. or C.
do cotton gin,	2 and A. or C.
do wheat fan	1 and A. or C.
do corn sheller	1 and A. or C.
do straw or shuck cutter	1 and A. or C.

Premiums on articles in the last class will be given without regard to the place of their manufactory.—The price of each article must accompany it.

FOURTH CLASS—SADDLERY.

For the best set carriage harness	\$3
do do buggy harness	2
do gent's saddle and bridle	2
do ladies' do do	2
do set 2 horse wagon harness	2
do " 1 do do do	1
do bridle or halter	1

FIFTH CLASS—Cabinet and Upholsterer's Work.

Best bedstead	1
do cradle or crib for children	1
do rocking chair	1
do half dozen common chairs	2
do centre table or wash stand	1
do sideboard	1
do desk or book case	1
do mattress, hair or moss	2
do do shuck or cotton	1
do sofa, settle or lounge	2
do wardrobe	1

SIXTH CLASS—SHOES, HATS &c.

Best pair gent's boots	2
do gent's and ladies' shoes	2
do brogans	1
do plantation hat	1

SEVENTH CLASS.—SUNDRIES.

Best lot leather	\$1 A or C.
do dressed sheep or calf skin	1
do lot manufactured tobacco	1 A or C
do do cigars	1 A or C
do do tallow candles	1
do soap	1

Branch Fourth.

FIRST CLASS.—Household and Mill Fabricks.

For the best piece woollen jeans	\$2
do linsey or kersey	1
do stout negro cloth	1
do piece flannel	1
do woolen blanket	2
do piece carpeting	2
do hearth rug	2
do white counterpane	2
do colored do	2
do bed quilt	2
do piece flax or tow cloth	2
do do bed ticking	2
do pair yarn socks	50 cts.
do do cotton do	50 cts.
Best made gent's coat	\$2
do do do pants.	1
do do do vest	1
do do do shirt	1

2nd CLASS.—Ladies' Ornamental Needle Work &c.

For the nicest piano cover embroidered	2
do ottoman cover do	1
do divan do do	1
do handkerchief do	1
do pair sleeves do	1
do collar do	1
do ladies' cap	1
do chemizette	1
do child's shirt	1
do pair gaiters	1

Paintings, drawings, &c. will receive discretionary premiums: and other articles omitted in the list, under the various heads, will be awarded premiums in proportion to those named. Diplomas will also be given for meritorious articles, at the discretion of the judges.

Branch 5th.—Experiments & Essays.

1. For the best mode of cultivating corn: how the land should be prepared: when the grain planted: when and how the fodder saved and the corn gathered—\$2 and A. or C.
2. For the best mode of cultivating tobacco and preparing for market—\$2 and A. or C.
3. For the best mode of cultivating wheat, and the value of guano and worn-out lands for raising wheat: its permanency, &c.—\$2 and A. or C.
4. For the best mode of restoring worn-out lands: what manure to be used, and the quantity and cost per acre—\$2 and A. or C.
5. Benefit derived from draining lands—A. or C.
6. Benefit derived from plowing under a crop of peas for manure, preparatory to sowing wheat or other grain: what pea to be used—A. or C.
7. Value of orchards to farmers: How planted and cultivated to render them most useful—A. or C.
8. Value of hedges as fences—how planted and cultivated, efficiently to keep out stock—A. or C.
9. Different modes of plowing, and their applicability to soils and crops—A. or C.

RULES AND REGULATIONS FOR THE GOVERNMENT OF THE FAIR.

1. Persons wishing to become members of the Agricultural Society, can join by paying one dollar, which will entitle them to a badge of membership, and admit their wives and children under twelve years old.

2. The Fair Grounds will be open for the reception of visitors at 12 o'clock M. on Wednesday. Price of admission 25 cents—children and servants, half price.

3. All exhibitors are earnestly requested to have their articles on the grounds by 5 o'clock, P. M. on Tuesday: so that they may be properly arranged before Wednesday morning: as nothing will be admitted for a premium after 10 o'clock on Wednesday.

4. All animals and articles must be regularly entered on the Secretary's book—the exhibitor showing his badge of membership. They will then be properly numbered and arranged in the grounds for inspection of the judges.

5. Exhibitors are expected to give attention to their animals on exhibition, and must bear the expense of feeding. Provisions may be had on the grounds at the market prices.

6. The awarding committees are particularly requested to report themselves to the Chairman of the Executive Committee, on the grounds, by 10 o'clock Wednesday morning, to receive instructions.

7. The judges must report, in each class, the three finest articles. The first to receive the premium, the other two diplomas.

8. To promote the agricultural interest of the country, the Executive Committee have made arrangements to give out a good many copies of *The Arator and Cultivator*, as premiums. The persons receiving more than two premiums marked *A. or C.*, are required to take but one copy of each, and will be paid the remainder in money.

9. Persons contending for premiums, must be residents of either Granville, Franklin or Warren county.—*excepting* for machinery, mentioned in branch 3rd, class 3rd.

10. The Chief Marshal, with efficient Aids, will be on the grounds during exhibition hours, to keep order; and a diligent police will attend at night to prevent accidents; tho' the Committee will not hold themselves liable for any that may occur.

11. The Marshals are expected to appear on horseback, and report themselves to the Chairman of the Executive Committee at 10 o'clock Wednesday morning, ready to enter on duty.

12. On Friday, at 11 o'clock, an Agricultural Address will be delivered by

A good band of music will be in attendance each day.

By order Ex. Com.

G. W. BLACKNALL,
Ch'm Ex. Com. Granville Co. Ag. Soc.

E. L. HARDING. Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents. FURNISHING ARTICLES. Our facilities for *buying cheap*, and having our goods *made up* under our own eye, makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2t

TABLE OF CONTENTS.

Agricultural Improvement in N.-C., by J. S. Dancy,	138
Agricultural Schools,	143
Birds, Spare.	145

Breeding Cattle for fattening,	129
Collins' Mill, Visit to,	156
Canada breaking the treaty,	144
Carbon, by Prof. Steuart,	137
Colts, altering,	146
Cow worth keeping,	138
Copiers, use,	146
Country, Life in the	147
Chain Pump, to mend,	154
Crops,	156
Diarrhoea,	151
Fruit Culture,	148
Fruits, preserving,	147
Garden Seed, how much to sow,	150
Guano,	145
Guano, Agency for,	152
Hams, to preserve,	151
Insects—Peach Borer,	139
Iverson Grass,	155
Items,	156, 157
Letters to the Arator,	149
Lime and Guano, how used for wheat,	136
Manures, cencestrated: by Mr. Bingham,	134 135
Model Farm, &c.	144
Musquitoes, where from	148
Ornamenting wood,	136
Pea for Hogs, &c.,	141, 152
Poison, Remedy for,	136
Potatoes, Sweet,	143
Posts, how set in rock,	144
Plows & Sweeps,	155
Reaping Machines,	142
Recipes,	151
Rose without a thorn,	151
Silver, new French	140
Strawberry, large Patch,	135
Strawberry, culture of	138
Squashes and Pumpkins,	142
Soak for Corn,	151
Turnips	139
Western Railroad,	156
Weevil in Wheat,	151
What every Poor Man may do,	152
Work for August,	153

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,
MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

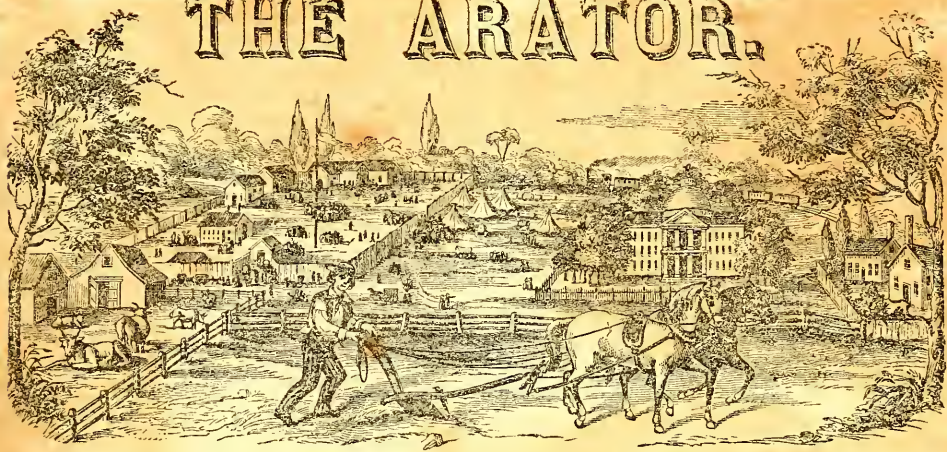
We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4-4f

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS HUNDRED ARTS.

VOL. I.

RALEIGH, SEPTEMBER, 1855.

NO. VI.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR a YEAR, in advance, or \$1,50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

From the American Farmer.

ON MALARIOUS DISEASES.

On the best means of guarding against Malarious Diseases in the Low Country of the Southern and Western States. By JAMES GREGORIE, of Christ Church, South Carolina.

No. 1.

At the age of seventy-three, and having passed a great part of my life as a planter in the low country of South Carolina, I have had full opportunity of observing all the deplorable effects of Malaria, on those engaged in country affairs, from being driven annually from my own property, to seek shelter from infection in Charleston, or on the sea-beach of some of our sea-islands. The consequences of an absence from home, during five months of every year of my life; from my people in time of sickness; from crops of all kinds at harvest time—the inconvenience and labor in removing such a distance twice a year, and the tedium of an idle summer, had long forced upon me, as a matter of profound reflection, the possibility of finding a remedy for such a calamitous state of affairs. Many circumstances had brought conviction

to my mind, that some mode of protecting those who are compelled to live in the country, against ague and fever, and other malarious diseases, might be found. My opinion was confirmed by the perusal of foreign writers on the subject, and three years ago I laid my theories and information before the public, in a few essays through the Charleston newspapers.

As soon as these essays appeared, I was furnished by gentlemen of the first respectability, with Carolina facts, proving the truth of what I had already published, and which hitherto might have been considered as scarcely more than mere conjecture. Some additional numbers conveyed through the same medium this strong support given to what I had already said on the subject; and I have every reason to believe, that a serious impression was made, wherever the whole had been read and reflected on. Before I submit to your readers, (as concisely as practicable,) a synopsis of the information collected, and the inferences and lessons to be drawn from it, I would observe, that I found by inquiry amongst our best informed scientific men, that the most carefully conducted researches and experiments, by our own, by French and other European Chymists and Philosophers of the highest standing, (and there have been many made,) had altogether failed in detecting Malaria itself. Independent of this, as it overwhelms our whole Southern and Western country, and is found from Canada, to the very limits of South America; to seek for disinfectants, or for security in any

other shape than that of shelter from infection, would be as idle as it would be useless. To give an idea of the extent of the evil in this part of South Carolina, I mean the low country, I would observe that there is not a plantation known, where (putting aside rice fields, rivers, ponds and ditches,) the settlement is exposed to the mere cultivated high lands, to pastures or old corn and cotton fields, that a stranger to the climate could pass a single night, without almost certainty of losing his life from severe bilious fever. Persons accustomed to the climate, do persevere through incessant attacks of intermittent, and even higher grades of fever, to visit such plantations and sleep a night or two; but finally, and even in old age, sink under a last attack, or from a constitution broken down by long continued effects of Malaria—the fatal cause of all our Southern absenteeism, and the bane of our otherwise most happy land.

A fatal delusion, a most melancholy mistake, in its effects, has long reigned paramount amongst all our planters without exception; it is that of having extensive clearances around their dwelling houses; either of cultivated land, or of old fields thrown out of use for a year or two. Many settlements cover from two to five acres, with buildings scattered here and there, useful it is true, and supposed to be protected by the owner's eye, which yet are not seen by him for a whole summer.—These places being unsheltered by trees, are peculiarly and fully taken possession of by the most fatal exhalations.

About the beginning of last century, it was customary to leave Charleston in the Summer, and retire to the country without apprehension. Dorchester, about sixteen miles from Charleston, was a favorite resort. This village has been abandoned nearly a century, having become dangerous to health—its sight can only now be found by the ruins of the church. Jacksonburg and other places have gone to similar decay. For some time after the Revolution, the period of leaving the plantations for the Summer, was from the first of July to the end of the month. After the introduction of cotton, about 1794 or 5, as the country became cleared of woods, the time to leave their homes was changed by the planters to June, from the first to the tenth. Within the last twenty years it is again altered to the middle of May.—Even at this comparatively early season, precautions against Malaria are highly necessary on most places, and are not always effectual, even in that month.

I now proceed to give you and your readers, Mr. Editor, as briefly as I can, the precautions to be taken to guard against the malarious diseases of our country, and of others subject to the poisonous exhalations we are treating of; with as many facts and extracts as will prove the influence which such measures will have in preserving life.

JAMES GREGORIE.

Christ Church Parish

South Carolina, Feb. 20, 1850. }

No. II.

To insure protection from Malaria in dwelling-houses in our Southern country, during the summer and fall, they must either be closely surrounded by the forest, or by umbrageous forest trees, with a thick undergrowth of bushes for a width of two or three hundred yards.(1.) If such situations cannot be had, the sleeping rooms ought to be in lofty buildings surrounded by walls, or fences equally close and of the height and proximity to the house of those in populous cities or towns.—The inhabitants in this case ought to sleep always as near the top of the house as possible, but never near the ground.(2.) Windows and doors ought also to be shut up an hour before sunset, and not opened in the morning until the sun has risen an hour or two. Those who strive to keep their health will be wise to follow the same rule in being at home in the evening, or leaving it in the morning.(3.) It is of no importance what kind of trees the wood is composed of, provided they are close and thick, and that the ground is well filled with bushes and undergrowth. It is well known that miasmatic exhalations are heavier than the common atmosphere; even walls and fences, therefore, turn them aside, when carried forward by the wind;—hence, on the same principle, this is one cause why trees and bushes, which arrest their progress, are a protection. But in addition, it is a well established fact, that in the thick woods no dew is to be found even in the night. As in the forest, there are such natural causes of security, so in the open country, height from the ground, and shutting up the house, are the best artificial substitutes to adopt, until trees can be raised around the house, to afford sufficient shelter.(4.)

To build in the vicinity of rice fields, or the reserves of fresh water rivers, lakes or ponds, or to practice ditching or open draining near dwelling houses, in the Southern States, is too often attended with serious sickness to the inmates, even early in the year. The fatal time in all hot climates, is, on the drying up the water, and the most deadly,

when to all appearance it has entirely dried away; but more especially is the danger increased tenfold by exposure to the malaria at night.(5.)

Some years ago, when the writer began his enquiries on the subject of health, he applied to one of the most experienced planters for information on the health of overseers,—his reply was, “on the place near you, in six years I have had one man who is still alive. On the plantation on——river, in the same time, I have had six overseers, every one of whom died there.”

When the foregoing statements are duly reflected upon, and when the additional fact is known, that the judicious use of the Sulphate of Quinine has given so perfect a control over malarious diseases as to enable the medical practitioner (who has put aside his old practice and prejudices,) to arrest intermittent and remittent fevers, after the first or second attack; we think by the further blessing of God, these diseases, the very destruction of our comfort and prosperity, might be banished from the domicile of every careful agriculturist, who desires to live upon his own land the whole year round.

I respectfully submit this subject to your numerous readers, Mr. Editor, with the final remark, that it ought to be brought to the notice of all those who are compelled to live upon their farms, or who, as overseers, occupy, in summer, the place of proprietors of plantations. These are the individuals who are able, at first, to aim at preserving sound health under painful difficulties, and who, if they experience the efficacy of *any method* of ensuring it, ought to spread knowledge of that method far and wide. I am, &c.,

JAMES GREGORIE,
Of Christ Church, S. C.

Proofs in support of this principle, in South Carolina.

(1.)—*1st Fact.—Communicated by T. W. Glover, Esq., of Orangeburg.*—The village of Orangeburg has been founded upwards of a century. The original site was about half a mile from the river. The forest trees were generally removed and their places had not been supplied. The village was reputed to be sickly at an early period. In 1815, many of the inhabitants removed five miles to the Poplar Springs in search of health, and they continued to go there every summer till about 1829. In that year, says Mr. Glover, I was induced to change my residence, that I might be nearer to my business, and built about half a mile from the old village, in the midst of the forest—*mostly oaks*; believing I should have health nearer home. In a

few years several other persons became my neighbors, and to this time (1846) we have no reason to regret the change of residence. We have in the new village enjoyed for sixteen years such a degree of health, as we believe is not surpassed anywhere.

2nd Fact.—Communicated by a near relation of the party.—In 1817, Dr. Capers removed to the plantation of Mr. Vanderhorst, St. Helena, S. C., where he superintended the health of the negroes on the plantation, practising also in the neighborhood: the owner at that time living in England. He resided there seventeen years with perfect and uninterrupted good health. The house was surrounded by a belt of trees on three sides, of about two tasks wide, consisting of live oaks and a mixture of all sorts. The other side was open to salt water. The undergrowth was left uncleared, and consisted of myrtle and the various bushes of the Sea-islands. Mr. Vanderhorst, at one time, ordered these trees and bushes to be cleared away to give a view of the house, intending to sell the property; but Dr. Capers having informed him that if he did so, he would leave the place, they were left untouched.

3d Fact.—Communicated by the Doctor himself.—About the year 1732, Dr. Yates, who had lived on Wadmalaw, where he had been liable to fever and ague every summer he resided there, removed to Page's Point, Prince William's Parish, S. C., where the dwelling house is surrounded on three sides by trees to some extent. The other side looked out upon an extensive salt water marsh.—There he enjoyed uninterrupted health during his entire residence, which was for six years.

4th Fact.—Communicated by a native inhabitant of Beaufort, S. C.—At the beginning of the present century, the west side of the town of Beaufort was known to be perfectly healthy. Many large and elegant houses were built there, on the outskirts of the town; and the College with a residence for the principal of that institution was also located there. Beyond this, the country was in woods. And although a cotton field was soon after cleared by Mr. Bedon, near the town, yet its health was unimpaired; as the Episcopal glebe land, then in woods, still covered the adjoining houses by a broad belt of trees. About 1804 or 5, this belt of woods was cut down by the Rev. Mr. Hixt in clearing the glebe for cultivation. The malaria produced from this land, was thus not only introduced, but also that from Mr. Bedon's cotton field and the country beyond. The consequences were so fatal, that not only the College was abandoned,

having, with the various dwelling houses, become subject to country fever, but it is believed that every house which could be removed has been taken down and carried elsewhere.

5th Fact.—Judge N. resided in Union District, at the distance of a quarter of a mile from the river, having, with his family, perfect health for many years, while protected by a wood from malaria. After his death, his children wishing to get a view of the river, were induced to clear away the intermediate undergrowth of bushes, and to trim up the trees. In the fall, the family were attacked by intermittent fever, and it is said several deaths ensued.

6th Fact.—About thirty years ago, Dr. R. removed from St. Matthews to Columbia, to a house situated just at the head of a ravine, running on the rear of the South Carolina College, and which before had been perfectly healthy. He cut down the underbrush between his house and the ravine just before the summer set in. He had been there but a few months, when most of his family were taken extremely ill of fever, produced without doubt by admitting the access of malaria, from the forementioned ravine; proving incontestibly the security which such a growth affords against the introduction of an atmosphere prejudicial to health.

7th Fact.—The settlement of Pineville (Saint John's) was found to be a safe and healthy retreat in the summer time for many families. Lulled into security by long continued health, they introduced gardens, and suffered field culture to approach the houses. Sickness and death dispersed the inhabitants for years. But they are now enabled to return to the settlement once more in safety, in consequence of the trees and bushes having been permitted to grow up around them.

8th Fact.—Mr. H., a gentleman well known in Charleston, determined in the year —, to reside in future near his property on Cooper river. The experience of many years having shown that the Pine land settlements, if properly chosen, were certainly to be depended upon for health, went out with a friend to select a sight for a dwelling house. After searching the extensive pine barren woods, he decided upon a knoll thickly covered, and surrounded on every side by tall pines, and built his house. Unfortunately the want of an essential requisite to protect health, was overlooked by Mr. H., as there was no undergrowth for a mile or two around, and more particularly none in the direction of an extensive rice field reserve, which lay at a considerable distance, and the influence of

which was unsuspected. The family remained in perfect health until the time the rice crop required what is called the long flow, when the water is left on the fields till the crop is ready for harvest. The water in the reserve having been all drawn off to cover the fields, the malaria arising from the bottom and margin of the reserve, was carried by the wind through the clear pine land, under the tall trees, as far as the dwelling house of the unfortunate family. The father and mother both died, and it is believed several of the children.

From Dr. Parish's Lecture, delivered in Philadelphia.—Fancy Hill was situated a few miles below Philadelphia, on the Jersey shore. The estate was covered with wood, but a settlement had been formed, and 60 acres of ground cleared, on the shore of the Delaware. The house built of brick, stood about twenty-five feet above low-water mark, fronting South. It was bounded North, South and East, by wood land. At the lower boundary of the tract, the river forms an extensive cove with mud flats. From this to Fancy Hill, there was half a mile of close thick-set underwood, 50 yards in width, and between the house and this fruitful source of disease, there was besides interposed a barrier of pine timber so closely set, that a horse could not pass it. This barrier was cut down in 1810 and '11, to give a prospect down the river, and the ground was formed into a water-mellon patch. The opposite side of the Delaware at this place admits the Schuylkill, and Hollander's creek, both of which have low and swampy shores. The house was thus surrounded by fruitful sources of miasma, and by cutting down the pine wood a complete entrance was given to the pestilence by which it was driven to the house.

In the latter part of the year, a fever broke out in the family, of so malignant a character, that in some cases it ran on to death in five days; on some it was remittent, in others intermittent; but not less than 70 persons were more or less diseased from this source.

Although the experience of our own country is thus clear and decided in proving that trees are a sure defence against malaria, yet such is our anxiety to produce a settled conviction of the fact on the minds of our readers, that we quote from Ferguson the following additional pointed statements:*

*Dr. Ferguson's remarks were originally published by the Royal Society of Edinburgh, before whom they had been read in 1820. They were afterwards republished in the Philadelphia Journal

"Another property of the marsh poison is, its attraction for, or rather its adherence to lofty umbrageous trees. This is so much the case that it can with difficulty be separated from them; and in the territory of Guiana, particularly, where these trees abound, it is wonderful to see how near to leeward of the most pestiferous swamps, the settlers will venture to place their habitations, and that with impunity, provided they have this security."

"The localities of the plantations situated on the windward banks of the rivers that intersect Guiana, and are generally covered by swampy woods in close vicinity, exemplify this fact in a remarkable manner; and at Paramaribo, the capital of Surinam, the trades-wind that regularly ventilates the town and renders it habitable, blows over a considerable tract of swamp at a short distance, but which fortunately for the inhabitants is thickly covered with umbrageous forests. Experience beside has shown that there, as in all other new lands, the cutting down of those trees in the swamps, has ever been a fatal operation in itself, and in all probability would be productive of pestilence in the town."

"The town of New Amsterdam, Berbice, is situated within short musket shot to leeward of a most offensive swamp, in the direct track of a strong trade-wind that blows night and day, and frequently pollutes even the sleeping apartments of the inhabitants, with the stench of the swamps; yet it had produced no endemic fever worthy of notice, even amongst the newly arrived, for period of years previously to my visiting that colony."

[*Phil. Jour.* 7th vol. p. 13.

"When I was last in the West Indies," again says Dr. Ferguson, "I recommended, and if not done, recommend still, that the deep marshy isthmus outside the post of Prince Ruperts, Dominica, from which it was believed to derive its malaria, should be covered with the closest growing trees; and that the brush-wood covering the landward face of the inner hill, which had so carefully been cleared away should forthwith be restored."—*Edinburg Medi. and Surg. Jour.* 1843—p. 197.

of Medical and Physical Science, vol. 7, with great commendation.

In 1815, '16 and '17, he was employed by the British Government in making a topographical health survey of all the West India Colonies, which afforded him opportunities of improving the observations he had made elsewhere, upon pestiferous miasmata of a kind that, he says, he could hardly have anticipated. He stands at the head of the authors on this subject.

"In Sicily," says Maccullock, on Malaria, "and also in Greece, it is observed and very universally, that valleys not only confine, but conduct malaria; this being a very conspicuous fact in the latter country, in many narrow valleys, which open to the sea, and thus conduct the breeze inland through pernicious tracks, to places not essentially unhealthy. Similar cases occur in Italy as elsewhere. They indicate the obvious remedy, so as to intercept the current.—*Maccullock*, p. 114.

(2.) *Proofs from Medical writers of high standing.*—In his work on the diseases of the British army while in Holland, Sir John Pringle states: that "such as lay in the upper stories enjoyed much better health than those on the ground floors:" p. 13. He states further: "that the Quartermasters were ordered to refuse the ground floors:" p. 95. The diseases spoken of were such as are produced by malaria, dysentery, diarrhoea, but principally intermittents. Dr. Madden, an excellent physician, in his travels in Egypt, says:—"In Mr. Salt's house alone, I am now attending nine of his domestics with ague; and it is a curious fact that those persons only who inhabit the ground floor, are the victims of the disease: not one of those who occupy the upper story have taken this disorder." In our own country, we have been informed by a young medical friend, who passed three months in the Blockley Alms House, Philadelphia, situated on the Schuylkill, (sleeping himself in the third story,) that from 50 to 60 cases of intermittent fever occurred in the establishment the year he was there; every one of which originated on the ground floor—none higher. He stated further, that the porter was usually the first affected.

(3.) Two families, well known to the writer of this article determined to pass the summer on their plantation near Charleston. The house is remarkably lofty, situated upon, and nearly surrounded by a salt-water river, a mile wide, and from its situation, promising the security of health, excepting on one side, which was exposed to the cultivated fields. The one family, consisting of an aged relative, a boy of twelve, and two children of four and six years of age, retired to the house regularly before sunset every evening, and shut down the sashes, as here recommended. The other family, consisting of the mother, two boys of ten and twelve, and two young girls, did not take the same precaution, but generally remained out in the open air after sunset. On one occasion, the mother and one son remained out an hour after sunset.

This last family were all taken down with intermittent fever in succession, the son, last mentioned, most violently. One of the girls, who was subject to a chronic affection, died from the malarious attack having assumed the type of her complaint. The other family who retired before sunset, and shunned the night air, had no symptom of complaint of any kind. On the 10th of August, at the entreaty of their friends, both families removed to the sea-shore for the summer.

(4.) "The malaria being heavy, and therefore low, may be stopped by low hills, woods, and even buildings. For the same reason the difference of exposure is very abrupt in its effects: only a narrow road separates the two villas Lodovisi and Medici; yet, the former is subject to the Malaria, and the other a refuge from it. At St. Calixtus, the cells next the country are unhealthy in summer, while, the opposite side of the convent is safe."

[*Forsyth*, p.p. 265-269.

And so it is in our own immediate neighborhood of Charleston. The former hospital at Fort Johnson was healthy at one end, but at the other subject to country fever from Malaria.

A house on one of the Islands of the harbor, well known to the writer, was subject to the same misfortune at one corner, from its proximity to a range of small ponds, and the lower story altogether unhealthy from the same cause. In Beaufort, South Carolina, two kitchens are within fifteen feet of each other; the one facing the West, and having all its windows on that side, is liable to fever and ague; the other facing the East, and having no windows to the West, has been exempt.

These cases are quoted to show that dead walls, whether inside or outside of dwelling houses, will stop the transmission of miasma, and thus secure health. The size of the trees to be reserved as a protection to plantation settlements, we presume need not be higher than the common run of fruit trees, (20 feet high,) and we should suppose the fig tree peculiarly fitted to keep out noxious exhalations, from the unusual thickness of its foliage. If these conjectures are correct, those who delight in ornamental gardening may make these protecting belts of wood, objects of great beauty and taste, as well as of profit and usefulness, in raising fruit of every description.

All the ornamental myrtles and other shrubs might fill the wood as undergrowth, and as no dew is found in the forest, the evenings might be spent in more enjoyment than in towns.

We have the authority of Dr. Backman, an eminent botanist of Charleston, for saying that if he

commences botanizing early in the morning, he betakes himself to the thick forest, until the sun has produced effect in the less condensed wood.—In the first, Dr. B. says no dew is found. Two friends now residing in Christ Church, and who removed to Alabama at its first settlement, have repeatedly declared that the country there, was perfectly healthy so long as it was in woods. They constantly camped out in the woods in hunting, and found no dew in the night there, even on the barrel of their guns. As the country was cleared to plant cotton, it became more and more sickly, until they finally returned to Carolina.

(5.) "The most ignorant peasant of Lincolnshire, knows that there is nothing to be apprehended from the ditches of his farm, till they have been dried up by the summer heat."—[*Ferguson*.

"But if facts should be required respecting the pernicious effects of ditches, or drains, Walcheren itself seems to furnish unexceptionable evidence; since the soil itself is sandy, being a mixture of clay and sand, and it appears to be from the drains chiefly, that its most pestiferous air is produced."—[*Mucculloch*, p. 43.

"In the Campagna of Rome, which is also a dry soil, the malaria seems similarly to be produced by the drains."—[*Ibid*.

"But among some more pointed facts of this nature, which admits of no dispute, such was the effect of draining the marsh of the Chatreuse near Bordeaux. A succession of bad fevers, before unknown, commenced immediately upon the drainage, showing themselves first in that part of the town which lay nearest to the land reformed, and lasting through many years; proving so severe in 1805, that 12,000 people were affected, out of whom 3000 died in five months."—[*Ibid*, p. 56.

"Early in 1809," says Ferguson, "the army advanced in June towards Spain (from Portugal,) in a healthy condition, during very hot weather. The weather had been so hot for several weeks as to dry up the mountain streams; and in some of the hilly ravines that had lately been water-courses, several of the regiments took up their bivouac, for the sake of being near the stationary pools of water that were still left among the rocks. The staff officers who had served in the Mediterranean, pointed out the dangerous nature of such an encampment; but as its immediate site amongst dry rocks, appeared to be quite unexceptionable, and the pools of water in the neighborhood perfectly pure, it was not changed. Several of the men were seized with violent remittent fever before they could remove from the bivouac the following morn-

ing. The army advanced to Talavera through a very dry country, and in the hottest weather fought that celebrated battle, which was followed by a retreat into the plains of Estremadura, along the course of the Guadiana river, at a time when the country was so arid and dry, for the want of rain, that the Guadiana itself, and all the smaller streams, had in fact ceased to be streams, and were no more than lines of detached pools in the courses that had formerly been rivers. There they suffered from remittent fevers of such destructive malignity, that the enemy and all Europe believed that the British host was extirpated."

The following notice will apply to South Carolina or any of the States south of it, with equal propriety as it does to Africa; the coast fever is our country fever.

The Coast Fever.—"We have just received the painful intelligence that Admiral Daeres, only son Commander James Richard Daeres, of her Majesty's sloop Nimrod, and Lieutenant George J. Loch, of the same vessel, went lately on shore at Quillimane, in the Mozambique, where they unfortunately remained during the night, sleeping with the windows of their bedroom open. The following morning they returned on board, apparently quite well, but 12 hours afterwards, were both seized with that dangerous malady, the coast fever, which, in the course of a few days terminated fatally."—*South African, Cape of Good Hope, March 11.*

[From the Transactions of the Agricultural Association of the Slaveholding States.]

THE CLOVERS AND GRASSES OF THE SOUTH.

ADDRESS OF COL. ISAAC CROOM, OF ALABAMA.

THE Chronicles of the first half of the 19th century will present no great department of human industry, subject to greater reproach than that of Southern Agriculture. The vicious system has grown out of a seemingly unlimited extent of virgin soils, which nevertheless have been rapidly subdued and exhausted. Such a temptation may furnish some apology, but little justification, to the intelligent agriculturist, accessible as he is, to the precepts and examples of better systems of husbandry, and urged, as he is, both by interest and duty, to adopt them.

The purpose of our Association, laudable in the highest degree, is to arrest this downward course, to liberate our rural economy, if economy it may be called, from the reproachful imputations of the

past, to awaken it to a new life and to provide that in future it shall, stimulated by the successful examples of others, move forward in the path which has been irradiated by science, and which leads to the good of private and public prosperity.

To accomplish this very important result, worthy of the highest efforts of us all, it becomes necessary to scrutinise the errors, the defects and the vices of existing modes, and to suggest and to commend to public favor the remedies, the improvements and the benefits of the new ones.

With this view, the responsible duty has devolved upon us of showing, so far as our humble ability will allow, how far it is practicable to remove what has been to the present time, a sore reproach to Southern Agriculture, by addressing the Association on Clovers and the Grasses adapted to the Southern or Planting States.

All must admit that a deficient supply of pasture and of hay is the opprobrium of our agricultural management, nor is it less palpable, that the remedy must be sought in the clovers and the grasses. These are not only required for a liberal supply of stock food, but also for any judicious rotation of crops, by which we can hope for the renovation of our depleted lands. The opinion which has long and extensively prevailed, that clovers and artificial grasses are incompatible with a Southern climate, exerts a blighting influence on the industrial hopes of the South, and no labor can be more usefully bestowed than in showing its fallacy, none more grateful to the aspirations of the Southern planter.

The important question to be decided, then, is, whether the cultivation of clovers and the artificial grasses is practicable in a Southern climate? If this question shall be affirmatively established, observation and experience will indicate the most suitable varieties; and besides, it will assure to us a basis for future improvement and prosperity without limit or end.

And first we will speak of Clovers.

There are four species of these familiar to the country: The Buffalo or Native Clover; the White, the Yellow and the Red Clover. Reference will be made to a fifth variety, the *trifolium incarnatum*, or flesh colored Clover.

Of the two first species, viz:—The Buffalo and the White Clover, from some observation, it is believed, that the want of a vigorous reproductive power in their roots connected with the fact, that they disappear with the first hot weather of spring or early summer, not to appear again for six months, greatly disparage the value of these plants,

as a reliable resource for grazing or hay.

The Yellow Clover, if it be a Clover, being classed by some as a Lucerne, (*medicago maculata*), has recently attracted a good deal of attention from its reported successful cultivation in Greene county, Alabama.

This plant has the important recommendation of affording a large amount of green food during the winter months, the period of greatest scarcity. It is doubtful, however, whether its coarse and watery herbage is very nutritious or inviting. One who has successfully grown and fully tested it, has told us that his cows would neglect it to feed on the first young leaves of the common brier. It also requires a fertility and an expense of preparation in the soil, which it is highly probable, with the addition of lime and gypsum, would insure the growth of more nutritious and valuable grasses. During the rigorous spells of winter, early sown rye and barley, red clover and the artificial grasses have their feeblest growth, and if, during these periods, Yellow Clover will furnish a liberal supply of succulent food, it has much to commend it to public favor.

The *trifolium incarnatum* or flesh colored Clover, is highly spoken of by European writers. It is cultivated extensively in France and Germany. This plant is said to grow equally well on light or stiff soil, and to be earlier and as prolific as the Red Clover and Lucerne. It is not known whether its culture has been introduced into the United States. Some years ago, Mr. Skinner, whose memory is dear to American Agriculture, promised the patrons of the *American Farmer* that he would take immediate steps to procure some seed from France, but we are not advised whether he did so, nor if he did, of the result of the experiment.

Of the Red Clover, there are two varieties:—The *trifolium purpureum mapis*, and the *T. pratense*. These have also been distinguished as Western and Southern Red Clover.

Miller, a writer of authority, says:—The stalks of the meadow trifol, the little, early, Red Clover, are weaker, hairy, the stipule narrow and hairy, the heads of the flowers are rounder and not so hairy, as those of the large Red Clover, whose stalks are strong, almost smooth, furrowed, and rise to twice the height of the other. The heads of the flowers of the *trifolium purpureum mapis*, are larger, more oval, and more hairy than those of *trifolium pratense*, their petals open much wider, and their tubes are shorter.

The *trifolium p. mapis*, or larger, or Western Red Clover, is believed to be far the most valuable

of the two species, and the characteristics are given to enable those who may enter upon the Clover culture, to distinguish between them. This is more important, as the smaller or Southern species has been generally cultivated at the South, which is indicated by the name.

The immeasurable value of Red Clover for a successful husbandry, has been so long and well established, both in Europe and America, as to command universal acquiescence.

Red Clover and Gypsum were both introduced into Pennsylvania about the year 1770. To the late venerable Judge Peters, of Philadelphia, eminent as a jurist, and a patriot, and distinguished above all others of his day for his enterprise as an agriculturist, belongs the honor of having first cultivated Red Clover, and of having first used gypsum as a manure for it. The value of gypsum as a stimulating food for the grasses, had been accidentally discovered the year before in Germany, by a laborer who had been engaged in mixing stucco mortar. In passing to and fro, from his cottage to his work, through a sterile field, it was remarked that the grass sprung up with a remarkable luxuriance along his path. This was supposed to be the effect of the gypsum which dropped from his clothes. An experiment was made with plaster of Paris, on a small plat of grass near his house, which confirmed the supposition.

Judge Peters having learned these interesting facts, procured a small quantity of the Clover seeds which had just been imported, and having purchased a bushel of plaster of Paris from a maker of stucco ornaments in Philadelphia, commenced his experiments. This was the beginning and the basis of the Clover husbandry in the United States, which has since been productive of countless millions of wealth and comfort to the country, and the blessings of which must continue to expand and increase until we cease to be a civilized people.

Owing to our revolutionary war and the confusion which for some years followed its termination, the Clover culture did not get fairly under way before 1785 to 1790, some 15 to 20 years after the first experiments were made. This is proved by a communication made in the year 1787, to the Philadelphia Society for promoting Agriculture, by James Vaux, a cotemporary and worthy associate of Judge Peters. Mr. Vaux says:—Breaking up land is perfectly understood by all our farmers, I may say to an extreme degree, which ought to be counteracted by the art of laying down land with artificial grass seed, otherwise the arable land in

the old countries of Pennsylvania, will, in a few years, become of little value."

It is encouraging to the Southern Planter to reflect that but little more than half a century has elapsed, a short period in the life of a nation, since the older and now the most prosperous counties of Pennsylvania and the other middle States, were in the same exhausted condition of their arable lands, which we have so much cause to deplore in the South.

Red Clover, lime and gypsum have been the chief agents by which the middle States have been restored and increased the fertility of their lands and attained their present enviable and profitable husbandry. Other grasses and other manures are most advantageously combined with these, but their connection with every successful system is so universal as to render it doubtful, whether these agents or their equivalents, are not indispensable elements.

The question here recurs with increased interest, Are these available agents in a Southern climate? Can Red Clover, by the use of lime and plaster of Paris, be successfully grown here? As before remarked, not only doubt, but a belief to the contrary, has extensively prevailed. As it is vital to the welfare of Southern Agriculture, it will be pardonable to occupy more time than would otherwise be allowable in removing these doubts and dissipating this error.

We will now attempt to establish the affirmative of this all absorbing question, and we confidently believe that we shall make it appear beyond a rational doubt, that Red Clover will flourish at the South as well as at the North, by the use of carbonate and sulphate of lime and other proper means, in a soil naturally or artificially good; that this plant is not so much dependent in fact upon climate as upon a suitable soil and proper food.

We will appeal both to circumstantial and positive proof; that the cumulative evidence may be such as to leave not a doubt behind. However unphilosophical this mode of reasoning might appear in the advocacy of common truths, the position taken is so vital to Southern welfare that we feel we should be justified, would we pile Pelion upon Ossa in fortifying it.

And first the circumstantial proof.

Twenty-five years ago, the same erroneous opinion we are combating farther South, prevailed in Virginia, that Clover would not grow in the light, sandy, acid soils of the tide-water districts of that State. This error has long since been exploded, and by the use of marl and gypsum, Red Clover is

now extensively and profitably grown there. The consequence has been an entire revolution in their agriculture, the credit of all which is due to the venerable Edmund Ruffin. And here we are forcibly reminded of the truth of the remark made by the sagacious Dean Swift, more than a century ago: "That he who makes two blades of grass grow, where but one grew before, deserves more of his country and better merits the gratitude of mankind than the whole race of politicians put together." Of the many noble sons of Virginia, none, after Washington, has proved a greater benefactor or more deserves a statue at her hands, than Edmund Ruffin.

He states, in his Essay on Calcareous Manures, that the increased value of lands in the tide-water district of Virginia, from 1828 to 1852, and comprising only one-twentieth part of the whole area, has been thirty millions of dollars, and when the whole shall have reached its available improvement, the increased value of these lands may reach five hundred millions, with proportional increase of other capital connected with farming.—Here, as in Pennsylvania and other States, clover, lime and gypsum, have been the great restoratives.

Coming farther South, it has, during the same period, been found both practicable and profitable, where the proper means have been used, to grow Clover on the alluvial soils of North Carolina similar in their texture and composition to those of Virginia, just described.

In Southern Italy, where the average temperature is not below that of our region, Clover is a favorite crop for alternating with rice.

It is known to have been the opinion of the late lamented Poinsett, that if the rice lands of South Carolina were sufficiently drained and protected from the influence of salt water, many of the artificial grasses would grow well on them, and enable the rice planter, not only to secure an abundant supply of the best hay, but to adopt a rotation of crops, as in Italy, by which his lands would be ameliorated and his crops of rice increased. So much for the circumstantial proof.

Next, we come to the proof positive.

In a letter written by John C. Calhoun, to the Editor of the American Farmer, and dated Pendleton, S. C., July, 1829, he says the cultivation of Clover has been heretofore neglected from an impression that the heat of our sun was too intense and our soil too arid for its production. But the result of my little experience has, I think, clearly proved that it will not only flourish well, but that it is difficult, if not impossible to eradicate it.

He goes on to say, that as early as February, 1816, he sowed two acres in Clover. It was suffered the first year to remain unmolested and drop its seed. The following spring, the entire surface was covered with the most luxuriant crop of Clover he ever saw. At the proper time it was mowed, and all who saw it was astonished at its product. The Timothy sown with it was remarkably fine.

The high price of cotton at that period, caused the neglect of the Clover, and the land the next year was deeply plowed with a two horse plow for potatoes, preparatory to a cotton crop. The fifth, sixth and seventh years, this piece of land was cultivated in cotton, yielding each year not less than 1000 lbs. of green seed cotton per acre. The ninth year thoroughly plowed and manured for a premium crop of corn, and yielded some sixty bushels to the acre, and would probably have made one-fourth more, but for a severe drouth. The following year made a fine crop of rye. The next year rested—then, sown in oats in February, and, to his astonishment, a fine crop of Clover succeeded the oats.

Mr. Calhoun very justly remarks in the conclusion of his letter, "that he must be sceptical, indeed, who does not believe, in the face of such proof, that Red Clover can be successfully cultivated, at least, in the upper districts of South Carolina.

Another experiment equally convincing was made by Col. H. B. Saxon, in the Abbeville District of South Carolina, the details of which are given by Thomas Parker, in a letter to the same Editor, and dated in April, 1831.

Col. Saxon sowed Clover in his plantation garden in 1823—first year permitted to remain and drop its seed—second year a luxuriant crop of Clover—third year in corn; the Clover appeared to be entirely destroyed. The fourth year wheat, and when it was cut, the Clover was thick on that part of the ground on which it was growing two years before. The fifth year it was allowed to remain and grew with such luxuriance, as to attract general attention. It was not cut, but was allowed to go to seed and the seed gathered. The sixth and seventh years in corn. The eighth year in corn—the ninth in cotton; and there is, he says, in the month of April after the cotton was planted, a great deal of Clover on the ground.

In the same letter, Mr. Parker refers to several successful attempts to cultivate Clover near the seaboard of South Carolina, which are recorded in the first volume of the *Southern Agriculturist*.

The late Thomas J. Summer, whose early death

Science and Southern Agriculture have so much cause to mourn, also made an experiment with Red Clover in the highest degree conclusive and satisfactory. Prompted as well by an intuitive sagacity as by a benignant heart, young Summer, turning away from the allurements of a selfish and vulgar ambition, sought in Europe under the most eminent masters, such as Liebig, Burzelius and others, the means of accomplishing himself in Agricultural Science, that he might be qualified to aid and advance the leading interest of his State and nation. His able analysis of the cotton plant fully establishes his scientific attainments, while his experiment with Red Clover no less evinces a capacity and an aptitude for uniting Scientific with practical Agriculture, which, had his life been spared, would have made him an ornament and a blessing to his country. Asking pardon for the digression into which our feelings have seduced us, to pay a feeble tribute to one whose affections and talents were devoted to our great cause, return we now to the experiment before alluded to.

Mr. Summer's experiment was made on the clay land of Pomaria, in Newberry District. By the aid of gypsum and cotton seed composted in the mule stables, bountifully applied, he cut from six acres of land in a single season, sixty-two thousand pounds of Clover and Crab Grass Hay, for which the South Carolina Institute awarded him the Society's medal. The cost of fertilizers, preparation of the soil, &c., &c., was \$72 for the six acres. It was seeded in barley and clover, and the portion of the barley left to mature yielded seventy-two and a half bushels. These six acres continue to be the most productive on the premises. For an expenditure of seventy-two dollars, which was more than reimbursed by the crop of barley, there was besides secured a crop of hay worth \$153 per acre and a permanent fertility of the previously improved land. A striking exemplification of the value of Science, and not less, of Red Clover.

Whether these successful and satisfactory experiments have been followed up, or whether Clover is at the present time grown to any extent, in the red land belt of this State or in any other portion of it, we are unable to say.

To come still further South, we take the liberty of saying, that we have been cultivating Clover for the last ten years in the cane brake or lime land of Marengo county, Alabama, a few minutes north of 32 degrees, with every success which could be reasonably desired.

It has afforded an abundant supply of grazing for stock of every kind, fattening hogs, sheep,

mares and colts, horses not at work, beef cattle, calves and goats, from March to November, and a good deal of grazing during the other months. Hay could be made if desired. It is grazed regularly from February to November, and irregularly at other times. During the period of regular grazing, stock of every kind will keep fat without any other food, and nothing is given to them, except a little corn to the hogs to keep them gentle and obedient to the call of the herdsman. The land as yet has shown no disposition to Clover sickness, nor was the crop ever much finer than during the past summer, although there was no rain on it from the 1st April to the 1st July, except, perhaps, one or two very slight showers. Although it cannot be doubted that moist summers are most favorable to its perfect development, yet when it has become well rooted in a deep rich subsoil, it is less affected by the influence of sun and air, than many other of our most valuable plants. It has often attained to the height of four feet.

We cannot give a better idea of its estimated value, than by stating that there are on the premises about one hundred acres in Clover; that the land would, with a favorable season, yield fifty bushels of corn, or fifteen hundred pounds of cotton to the acre, which it often has done, and that, notwithstanding it is believed to be more profitable in Clover pasture than in either of these crops, to say nothing of the saving in labor and the amelioration of the land. As proof, we will kill 30,000 pounds of pork, not inferior to the best Kentucky, which kept fat on it from February to first November, when they were taken off, not to fatten, but to make their flesh hard by a corn diet of six weeks before being killed. One half of these hogs were December pigs, and will weigh 200 lbs. neat. There are now grazing on it seventy head of sheep, twenty head of mares and colts, and horses not worked; several beef cattle, which are all fat, and eat nothing but Clover, nor have they had any other food since February last. Besides, some 30 head of mules run on it for some two months after the crop was laid by, having been taken off to put to work about the first of September. One half of this Clover was sown last winter, the remaining half is of some ten years standing. Of the old Clover, enough dried up in June, on the maturing of the first crop, to give a pretty fair cover to the surface, from the inability of the stock to consume it. When at the premises, some ten days ago, we asked the overseer if he had not better remove the stock to an open field, from which the corn and cotton had recently been gathered, and his reply

was, I see no necessity for it, as they are all fat, and the Clover is gaining on them every day. Our own inspection afterwards, verified the truth of his statement.

We have often expressed the opinion, and still maintain it, that when Clover is successfully grown, it is a far more valuable crop at the South than at the North. The reasons are, that being a biennial plant, it requires renewing every third year. This renewing is often, if not always, necessary in a Northern climate; but never at the South, so far as our experience goes. This volunteer plant preserves a good stand. Again; during some six months of the year, the Northern soils are frozen up, or covered with snow, while at the South, during much the largest portion of this time Clover grows finely.

We know of other planters in the same county, who have engaged in the Clover culture, and who are pleased with their success and prospects.

More might be said in its behalf, and more proof adduced, but we believe that sufficient proof has been presented to show, not only the inappreciable value of Clover to Southern husbandry, but besides, its adaptation to a Southern climate, and that its growth, in truth, is not so much dependent on climate as on the mechanical and chemical characters of the soil.

We assume, then, that by the use of manures, lime and gypsum, Red Clover may be profitably grown on all stiff lands or sandy lands lying upon clay sub-soils. Johnston says of the plant, even in Great Britain, that being a deep rooted plant, it is found to grow best in a stiff soil. This is an ultimate fact—a habit of the plant, for which science can as yet give no reason, and which, so far as we know, no mechanical or chemical constitution of the soil can alter.

In the Southern States, there is a large quantity of sandy, acid lands, resting upon deep sub-soils of the same character. These cannot be recommended for the cultivation of Clover. If lime were supplied to these, so much might percolate through the porous soil, beyond the reach of the roots of the plant, as to leave it an insufficient supply of calcareous food; and gypsum applied to such soils disappears, when they are not calcareous, probably in the way suggested by Mr. Ruffin. The gypsum is decomposed by the strong attraction of humic acid abounding in such soils; the lime combines with it, forming humate of lime, and the sulphuric acid forms with the iron or alumen of the soil, sulphate of iron, or sulphate of alumina, both of which are noxious to growing plants.

We do not wish, however, to disparage these lauds, for they are easily cultivated, and well adapted to some of our most valuable crops, and may be rapidly improved by the field pea, which has aptly been called "Southern Clover." The only objection to the name is, that it is calculated to foster the erroneous opinion, that the real "simon pure" will not succeed at the South.

To show that we have not exaggerated the merits of Clover, we will offer a quotation made by Johnston from Von Thaer, two of the very highest names known to agricultural learning. He says :

"When Clover was first introduced into Germany to fill up the year of naked fallow, in the triennial course of cropping, its effects appeared so extraordinary, that it was pronounced to be *the limit of the art of culture*. It gave fodder for cattle during the formerly naked year, it gave a better crop in the following year, and it was supposed to choke the weeds which infested the fields of grain."

We trust we shall be pardoned for having occupied so much time on the subject of this plant, in view of its importance in every prosperous system of husbandry in this country and in Europe, its equal value in our own sunny land, and of the interesting reflection, too, that if equally available to Southern enterprise, it removes an incubus from our hopes, and fills the future with bright visions of unlimited improvement and prosperity.

Leaving the Clover proper, we come next to Lucerne, which belongs to the same family, being a trifol and resembling Clover in its general appearance, and likewise in the great depth of its roots, which are said often to descend as much as ten feet.

Lucerne (*Medicago Sativa*) is earlier in its growth than Red Clover; more rapid in its growth; is said to yield a larger amount of green food, which is more delicate and nutritious, and also to make a superior hay. It often grows to the height of three feet, furnishes four good cuttings, and makes four and five tons of hay to the acre.

Lucerne is a native of Spain and the South of Europe, and is the favorite grass of France, of Spain, Portugal and Italy; of Rio Janeiro, Brazil and of Chili.

Its deep tap root enables it to bear the long drouths and hot sun of Southern climates.

The late Judge Buel says of this grass :—"From my own experience and the observation of others, who have cultivated it, I am satisfied that an acre of good Lucerne will feed six milk cows for five months, or from the 25th of May to the 25th of October, which allowing \$1.50 per month to each beast, would be \$45." This, at 7 per cent, would be the annual interest of \$642.

He says, further, "That it bears drouth better than any other grass, and remains longer in the ground, being a perennial plant."

Lucerne is chiefly used for green soiling, and is an exhauster; and the superiority of Red Clover to it, consists in the adaptation of the latter plant to the purposes of grazing and the improvement of land.

Both the history and character of this Grass point to it as suited to our Southern climate, and these indications have been verified by many successful experiments throughout the South and South West.

It has been grown as luxuriantly and yielded as large an amount of green food to the area, in Greene county, Ala., as it probably would have done in New York, under the same conditions of soils.

In treating next of the Grasses proper, it may be remarked, that although it is common to class Clovers with the Grasses, Johnston speaks of them as two classes of plants. He says, the two classes, indeed, are related to each other, both botanically and chemically, in the same way as corn plants are to the leguminous, such as the Pea and the Bean. This classification is of some importance, as it indicates the proper soils and manures for each of the classes.

Of the artificial Grasses, those best known are the large and small Blue Grass, Orchard, Timothy, Herds, Bermuda and Guinea Grasses. The Musquit and Rescue Grasses—the former a Texan, and the latter a South American Grass—have been recently introduced, both of which promise to be valuable. The four first named, viz: Blue, Orchard, Herds and Timothy Grasses, are cultivated extensively in the more elevated belts of the Southern States, and to some extent in the middle districts. In the more Southern and Eastern portions, also, experiments sufficient to test the practicability of their successful growth, have already been made.

The grasses are not deep-rooted like the Clovers, and cannot, therefore, bear so well the influence of a hot sun. But when sown on good soils with the necessary shade, they flourish in the central districts of the cotton-growing region, and will probably do so in the Southern portion of it. There are several large woodland lots of Blue Grass, of Herds Grass, and Orchard Grass, containing from ten to sixty acres each, in Marengo and Greene counties, Ala., which have been well set and growing finely for years, and afford a large amount of pasturage.

It is more desirable that the Grasses should grow in the woods, for in this way they can be made productive without injury to the valuable timber. In Kentucky, the woodland is nearly as valuable for its rich crops of Blue Grass, as the arable land is for grain; and, we are informed, frequently rents for four and five dollars per acre for grazing, with a

clause in the lease restraining damage to the timber. Our idea of a model estate requires every acre of woods to be in Blue and Orchard Grass, or Herds Grass.

The Musquit Grass has recently been introduced from Texas, and as it is a native of an almost tropical climate, and has quite an extensive habitat in its native country, the most sanguine hopes are entertained that it will prove a valuable acquisition.

Mr. B. V. Iverson, of Columbus, Ga., has lately introduced a new species of Grass, which he calls Rescue Grass, and which is very appropriately named, if it be as valuable as he represents it.

He has had it classified by Dr. Torrey, of New York, who calls it *Ceratochloa Breviaristata*, or short Awn Horn Grass, and says that it has the largest grain of any known grass; that it is a native of the Pacific coast; that from its large grain it makes a very valuable hay; and further, that it must prove a valuable acquisition to the South.

Mr. Iverson says that it will keep stock fat during the winter and spring; that it is as nutritious as Barley, and stock are as fond of it, and concludes its praises by saying that, without reservation, it is the most valuable Grass ever introduced into this section, or which can be introduced. Without any design to impugn his statement or disparage this Grass, we will say, that if it should prove half as valuable as is represented, it will confer a blessing on the South, and most rapidly come into public use and esteem.

The Bermuda Grass is valuable for pastures, in many situations where other grasses and crops will not flourish, as in exhausted fields, on gullied hillsides, and on river and creek bottoms, which are unfitted for cultivation by frequent overflows. The great objection to this grass is, the difficulty of eradicating it, when it spreads into the adjacent cultivated fields, which it is much disposed to do.

The Guinea Grass furnishes a large amount of green soiling, and also roots, which are a nutritious food for hogs, but it is liable to the same objection with the Bermuda Grass.

There are other foreign grasses which may yet be imported, and upon a fair trial prove valuable to us, as they have done in Europe; such as the Italian Rye Grass, Meadow, Rescue, &c., &c., which are so much prized in England.

Besides the artificial Grasses, the South possesses treasures in her native grasses which she has not yet learned to appreciate. If proper attention were bestowed on these the value realized would astonish us. As an illustration, a gentleman of Autauga county, Ala., distinguished for his successful enterprise in another department of industry, told us, a few weeks ago, that from 20 acres of creek bottom land,

he had the present year saved 10 tons of sound sweet Crab Grass hay, which would serve his purposes as well as the Northern hay, for which last he had to pay \$35 to 40 per ton by the time it reached his stable door. His 20 acres of grass will, therefore, be worth to him \$1400 to \$1600, or \$70 to \$80 per acre, which is the interest on \$800 to \$1,000 per acre.

In conclusion, we will say, that while we lament our want of ability to do justice to this most important subject, we at the same time believe, that in view of all the facts and considerations which have been presented, in the words of Mr. Calhoun, previously quoted, "he must be sceptical, indeed," who does not believe that Clovers and the artificial Grasses can be successfully grown in a Southern climate. This is the great pivot upon which our Agricultural fate turns. Settle this question in our favor, and the future becomes bright. It gives us a foothold upon which we can firmly stand, and challenge the world to a competition in the race of human prosperity.

Without a serious rival in the great markets of the world, in the three leading staples of Cotton, Tobacco and Rice, with \$2,000,000,000 of extra labor; with a country extending from the fortieth parallel of latitude nearly to the northern tropic, and embracing thirty degrees of longitude, with every variety of soil and climate, variegated with lofty mountains, fertile and wide spread valleys and rolling prairies, drained by navigable rivers unequalled in North America or Europe, with convenient and capacious harbors, with a sea at our door which must be the pathway of the world's commercial travel, with unlimited water power and inexhaustible supplies of Coal, Iron, Copper, Lead, Lime, and other valuable minerals, as also of timber; and with a population religious, intelligent, enterprising, energetic, and ambitious of the highest civilization—with all those unrivalled gifts and privileges, yet lacks the South one thing, which is necessary to their full fruition. This is an improving Agriculture; a system of husbandry which shall properly unite pasturage with tillage, which will secure a liberal supply of fine stock, and a gradual amelioration of her arable lands. Without this, as an Agricultural people, declension, and not progress, must be our destiny. Give us but this, however, and in the future of our glorious country, the South may achieve all that fancy can depict, or fable invent.

GREAT YIELD.—The Charleston Mercury says:—"We learn that on a field of seven acres adjoining the Swedish Iron Works, in Union District, 367½ bushels of fine wheat have been raised the present season, being at the rate of 52½ bushels to the acre. It was manured with 300 lbs. of guano to the acre."

AGRICULTURAL IMPROVEMENT.

While out in this county at the tax-gatherings, we were gratified to hear from a few of our farming friends accounts of their successful experiments in improving the fertility of their land. It is certainly encouraging to see that a spirit of improvement is abroad, and though but few, comparatively, have made much progress in the matter, an earnest inquiry is awakened, and the importance of improvement is generally felt; we may therefore hope that the successful practice of the few will soon set the many to work in the right direction. The important question with farmers now is, how can the productiveness of our lands be increased with the least expense? As aiding in the answer of this question, we will give, briefly, the experience of two farmers of this county, as related to us, in the use of the Pea Vines as a fertilizer.

A farmer living in the Eastern part of the county, told us that he placed more reliance on the pea vine than on guano, having tried both. The pea vine he regarded as a certain profit; while if the guano failed from any cause, he considered it a dead loss of no inconsiderable amount at present prices. He stated that he had just gathered a crop of wheat from a lot of eighteen acres, upon which the previous year he had raised a crop of peas, leaving the vines to be ploughed in. The wheat he pronounced the finest he ever saw. He had not measured it, but stated that he hauled from the field ten four-horse wagon loads, each of which he was confident would yield from eighteen to twenty bushels of wheat. Take the lowest estimate, and it gives a yield of twenty-two and a half bushels to the acre! How many fields upon which guano was used will beat that the past season?

The other experiment was related to us by an intelligent farmer living in the neighborhood of Chapel Hill. The experiment was tried on a poor piece of land, upon which a year or so ago he attempted to raise a crop of wheat, but entirely failed. He did not attempt even to cut it. After pasturing it awhile, he ploughed in the remaining straw, and followed it with peas sowed broad-cast. At the proper time last fall the vines were ploughed under, the soil being broken as deep as possible, and a crop of wheat put in. The yield of wheat on this field was better than on any other on his plantation, and proved the beneficial effects of the system adopted entirely to his satisfaction.

We regard these experiments as important, not as furnishing any new truth, but as affording gratifying evidence that some at least of our farmers are beginning to leave the old paths by which their lands have been exhausted, and are adopting plans by which their fertility may be restored and their productiveness greatly increased. One good exam-

ple in a neighborhood, by its success, will soon induce others to follow it. We have seen this happily exemplified in this county. In a neighborhood in which were many waste old fields a few years back, we now see, upon these same old fields, the most flourishing wheat crops; and we do not think we go too far in saying that this was brought about by one intelligent man in the neighborhood, who set the example of producing good wheat crops upon them. "What he did, others could do," his neighbors argued, and went to work accordingly; and it now, perhaps, may be considered the best wheat growing neighborhood in the county.—*Hillsborough Recorder*.

PLAN OF AN ICE HOUSE.—A correspondent (says the Real Estate Register) in writing of plans for ice houses, says "that the most successful plans are those where the house is almost entirely above ground. The floor should be of boards, and no current of air admitted below, while at the same time the water which melts from the ice must be made to drain off immediately. For the rest, let the apartment be, say twelve feet square, with double walls, well packed between with *dry* saw dust or tan-bark, and secured against the burrowing of rats or mice. Leave a hole, say four inches square, in the roof for ventilation. Have a second roof, ten or twelve inches above the first, to break off the sun's rays, and let both roofs project well beyond the walls. Grade the earth on the outside so that surface water will run off. Let the entrance be through two small close fitting doors, one on the outer, the other on the inner wall, and placed well up from the ground. In putting in the ice, let it be cut in large square blocks, and packed as closely as possible, the whole well covered with very thin pine shavings, or if they cannot be had, with clean saw-dust or even straw. The best situation for an ice house is a shaded one, or a northern exposure, and upon dry soil, free from steaming vapors.

GUANO IN ABUNDANCE.—Consular despatches communicated to the British Board of Trade since the 1st of January last, state that deposits of guano have been discovered in the islands composing the canton of St. Andres, in the province of Carthageia, in the islands belonging to the Ecuador, off the coast of the province of Manabi, in an islet called "Hergest's Rocks," situated near the island of Naukahia, in the Marquessas group; on the east end of the island of Gaudaloupe; on St. Mark's Island; on the proximity of the bay of St. Bartholomew, on a small rock near the southwest end of the island of Natavidad; on the Muria Island. The government of Carthageia have prohibited the exportation of guano from the island of San Andres.

AGE OF TREES FOR BEARING.

THE Country Gent., in reply to a correspondent, says :

There are many controlling influences, that cause a great variation in the time of bearing. Trees under the best cultivation, will, as a general rule, begin bearing from two to six years after being set out, if standards; and in one-half to two-thirds of that time, if dwarfs. Badly managed, they might be three times as long, before giving crops; and if totally neglected, especially if they should die, the owner need not trouble himself to look for any crop at all. But there are other modifying influences besides these. Some *varieties* bear fruit much sooner than others. The Julienne pear, for instance, even if on pear roots, will often bear when only four or five feet high, and it is not unusual to see whole rows of young trees in the nursery, loaded with pears.—It is rare for the Bartlett, with good treatment to continue more than two or three years from setting out, without producing some fruit. On the other hand, the Tyson and some others, may be ten or twelve years without a pear.

There is not quite so much difference in the different sorts of the apple—but still, some, for example the Dyer, will bear in one-fourth the time required for the Northern Spy, and a few others.

There is still less variation in peaches,—most varieties coming into bearing in two or three years after transplanting, with fair cultivation. A few years since we set out a row of twenty different sorts, the trees at the time being two years from the bud.—They received clean cultivation, no kind of crop being allowed to grow beneath them. The third summer, all or nearly all bore; and the greatest bearer among them furnished three pecks of fine ruddy peaches. Others in the same neighborhood, set out at the same time, but in grass ground, and totally neglected, lingered about an equal period, and then died. Again,—in the fertile soils and under the warm suns of the southern and western States, fruit trees often bear in about half the time the same sorts produce crops at the north. In other instances, too much fertility prevents the formation of fruit until the vigor of the tree is checked. All these influences operate in producing exceedingly varying periods of time; and experience alone, in connection with a knowledge of these, will enable our correspondent to judge in the matter.

Cherries, apricots, and plums, bear in about the same time as peaches. Quinces being of a slower growth, require a longer period. We do not know precisely the age for chesnuts, but it is usually still longer.

CULTURE OF LUCERNE.

WE have been informed by Mr. Lewis Mabry of this city, that he has cultivated Lucerne regularly for more than forty years with the most satisfactory success. It has invariably supplied him with the greatest abundance of green food of the richest quality for soiling cows, and it makes a hay in all respects equal to clover. There are plants now in Mr. Mabry's yard which have been there for forty years. He has usually had about two acres of ground in lucerne, and his mode of cultivation is as follows :

The land should be well and deeply prepared, as the plants send down their tap roots to a great depth. The soil should be dry and rich. The time for sowing the seed is in September, and they should be sown broadcast. They soon vegetate, and the plants continue to grow vigorously during the fall, and acquire sufficient strength to withstand the severity of the coldest winters. In the spring, they start off to grow in advance of all other vegetation, and take entire possession of the ground. If the seed is sown in the spring, the grass will overtop and smother the lucerne, unless it is drilled, in which case it requires frequent and careful workings. It should not be sowed with any other crop. When sowed in the fall, it will furnish the cuttings the next season.—The second season it will be fully established, and yields as many as four cuttings, which it will continue to do for four years. By the expiration of that period, it will begin to die out in patches, and another sowing should be made. The plants should not be suffered to bear seed any further than is necessary for new sowings.

On the whole, Mr. Mabry considers lucerne as invaluable, particularly on small farms, from the great quantity of food it supplies; thus enabling the possessor of only a few acres to keep a number of cows, which, in their turn, furnish abundant means of enriching the land, besides affording the owner the luxury and the profits to be derived from a good dairy. We would especially recommend to our farmers in the neighborhood of the city to make the experiment. With milk at sixpence a quart, and butter at 50 cents—never less than 37½ cents—a lb., the advantages to be derived from a dairy appear to us to be very decided.

Mr. Mabry informs us that the *Alfalfa* clover, about which we made some inquiry a few weeks ago, is nothing else than lucerne.—*Southern Farmer*.

GRATITUDE is the fairest blossom which springs from the soul; and the heart of man knoweth none more fragrant. While its opposite, ingratitude, is a deadly weed; not only poisonous in itself, but impregnating the very atmosphere in which it grows with fetid vapor.

From the Southern Planter.

THE DRUMGOOLE MULBERRY.

MR. RUFFIN: It has long been upon my mind to give you an account of one of our indigenous fruits, which ought to be better known as an object worthy the attention of rural economists.

It is a mulberry of rare species, first discovered in the county of Greenville. I met with it in the yard of the late venerable Rev. G. Drumgoole of Brunswick, father of the late Hon. George Drumgoole, who gave me the following account of it:

He had never known but one tree of this kind, from which his was propagated by engraftment upon the stock of a common native mulberry. The original tree was found in Greenville. It is the most prolific fruit tree of any sort or kind I ever saw; my attention being attracted by the immense crop of fruit upon it. I learned from Mr. D. that it never failed to produce an equal quantity every year; that for many years before I saw it, (30 years ago,) he had been in the habit of making a pig-pen under one half of its shade, leaving the other out for the benefit of the domestic fowls. The tree covered a circle of about 25 feet diameter, and kept two shoats in good eating order, and afforded an ample sufficiency for all the fowls while the fruit was falling—a space of about six weeks—from the valuable peculiarity of producing its fruit in succession.

Every particular as to the value of this mulberry I can vouch for, having obtained cuttings from Mr. Drumgoole. I have had bearing trees of the description above for many years past, and would gladly furnish cuttings at the proper season to any person who would be desirous of making such an acquisition to their homesteads or their plantation permanent turn rows as an important item of mast for all plantation stock.

Bremo, July 6th 1855.

JOHN H. COCKE.

THE BEENE PLANT.

WE make the following extract of a letter from a correspondent of the Patent Office, dated Monroe, Washita Parish, Louisiana, which is held in the publication in the forthcoming agricultural report. It treats of the "bene" plant, from which oil of a pure quality is produced in great abundance:

In 1843 I sent sixteen bushels of seeds of the bene plant (*sesamum orientale*) to a mill in Cincinnati to be manufactured in oil. It yielded thirty-nine gallons of clear oil, and about five quarts of refuse oil, or about two and a half gallons to the bushel.

In consequence of the mill imparting the flavor of flax-seed, I could not use it as a salad oil, for which purpose I am confident it would be superior, when pure, to the adulterated imported olive oil. I

used it, however, as a substitute for castor oil, and gave a considerable quantity of it away for that purpose. All who used it praised it highly, both for its gently purgative effect and from being free from the nauseous taste peculiar to castor oil.

I cannot state with certainty how much seed this plant will produce to the acre, but believe that twenty bushels is a moderate estimate.

The leaf of the plant is an excellent remedy for bowel complaints in children, and also in adults. For this purpose, two or three leaves are put in a tumbler of water, which they immediately render mucilaginous, but impart no disagreeable taste. The negroes cultivate it for food, using the parched seeds with their meats.

I consider it so useful that a few stalks at least should be raised in every garden. And I believe it will soon be extensively cultivated for manufacturing oil, yielding, as it does, about a gallon to a bushel more than flax-seed.

I doubt whether it will mature well north of latitude 36 degrees. It should be planted as soon as the frost is out of the ground. Poor land is best suited to its production, as it branches too much in rich soil, because the pods are more likely to shatter from the branches than from a single upright stem. The seeds should be planted in drills three feet apart, and six inches distant along the drills.—*American Agriculturist*.

CURE FOR CHOLERA.—Mr. E. W. the well known Eastern traveller, gives this receipt for the treatment of the cholera: If the patients have vomited the poisonous matter which is characteristic of the disease, and which resembles rice water, give a table spoonful of powerful mustard in a table spoonful of cold water as an emetic. After vomiting, (whether produced by the disease or the above means) within a few minutes give a wine glass of brandy, with ten grains of Cayenne pepper stirred up. This generally produces almost immediate relief; and in an hour, rest, perspiration and sleep. In a few cases, it was necessary to give half a dose of the brandy and Cayenne pepper, after an hour or more. A second half dose was never required; but should it be required, it may be given. To accelerate convalescence, it has been suggested that fifteen drops of a mixture of spirits of ammonia and sulphuric ether, in equal proportions, may be given three or four times the following day.

TON WEIGHT AND TON MEASURE.—A ton of hay or any coarse, bulky article usually sold by that measure, is twenty gross hundred; that is, 2,240 pounds; though in many places that ridiculous old fashion is being done away, and 2000 pounds only counted to a ton.

SWAMP MUCK.

THE term *muck* is generally applied by New-England farmers to the mass of vegetable matter usually found in peat swamps in a state of partial decomposition; by English farmers, to rotting straw, &c.; and by the Scotch, to barnyard manure. I use the word in its common signification in this country, and mean by it the dead vegetable substances described. These are the remains of trees and plants, some of which must have lived ages ago, more or less perfectly decomposed, and sometimes extending to a depth of many feet.—This substance is made up of different constituents in different localities, and its equality is therefore very variable. Hence we find a great variety of opinions as to the value of swamp muck as a manure. The various estimates of the value of swamp muck range from 33 cents to \$3 per cord, and give an average of \$1.27; and as there is no reason to suppose that the estimated value is not the real value in each locality, it follows that no general rule value can be definitely fixed. This depends on its quality.

Swamp muck is often cold and sour, and requires the addition of lime or exposure to the atmosphere and to frosts before it can be advantageously applied as manure. There are different modes of preparing it for use. The most common is to dig it out, expose it to the frost through the winter, and then put it into the barnyard to be composted with the stable manure. The following statements are from experienced practical men, and each gives the results of the observation of its writer:

A Middlesex farmer says: "I use swamp muck most successfully composted with stable manure, on different varieties of soils, but think it does best on high land of a loamy soil. I notice it is used very extensively by farmers with satisfactory results when composted with other manures thoroughly." A farmer of Worcester county says:—"I use it extensively on my hard, clay soils; it works well on dry lands to keep them moist, and on clay soils to keep them light." Another writer from Dukes county follows: "It should be hauled out in the fall, and exposed to the frost during the winter, and mixed with stable manure in the proportion of two parts muck to one of manure; it should also be used in the hog-pen, barnyard, and barn-cellar. I have found it a good manure on loamy, gravelly, and sandy land, especially for top-dressing for grass, when composted as above."—A Norfolk county farmer, who has met with great success, says: "The best way of using swamp

muck is to dig it and expose it to the sun, air, and rains one year, and then, when in a dry state, place it in a barn-cellar where it will take the droppings of the cattle above until it is thoroughly saturated; then mix it well, and it is ready for use. It is good for all high lands." He estimates it at about three dollars by the cord of one hundred and two bushels. A Middlesex farmer of great experience, states that "swamp muck is of different qualities, and varies as much as wood when used for fuel. Peat mud, the older the better, consists principally of vegetable matter. It has most effect on high and dry ground. Wood ashes are the best article to correct its acidity."

Similar accounts come from every section of the State. From Hampshire county we have the following: "The best method of using swamp muck, judging from experiments of my neighbors and my own, is to cart it out in the autumn, expose it to the frost and snows, then spread and plow it in in the spring on sandy, dry soils, or, in other words, on soils of an opposite nature to its own. I plowed in twenty-five loads on one-quarter of an acre last spring, and planted it to early potatoes, corn, peas, cucumbers, squashes and melons. It was a great preventive against drouth. That ground has been sown to rye, and it looks first rate." And from Plymouth county: "Swamp muck, as also upland soils, are valuable to mix with various kinds of manure to retain and absorb the salts. For upwards of two years I have adopted a different course with my swamp land from any I know of. I employ men with long-bitted hoes, sward-hooks, etc., to dig up the hummocks and bushes, in bodies large and small, as is convenient, and pile them in bunches for a few days to dry; after which I select a central bunch, in which I form a cavity or hole near the bottom or surface of the ground. Then I set fire to some of the driest and most combustible, and as it burns I replenish it from the other bunches, smothering in the coal-pit form, though more combustible, till it burned down to a perfect body of ashes and sand. I have not carried the experiment into full effect as I designed to; but so far as I have used the ashes, they have given me entire satisfaction. Their nature is to improve exhausted lands; and my belief is that they may be spread upon the same land upon which the ashes were made, and increase the growth of English grass. Much has been said upon the subject of reclaiming wet, swampy lands: but after all that has been done, as I understand it, a coat of manure is required to produce a good crop of English grass. Now, if our worthless

swamp lands possess the very article required to produce such grass by the simple process as above named, I think it would be an improvement in one point of agriculture."

A farmer of Barnstable county says: "The best compost manure is made in our barn and hog-yards, of swamp muck, sea-weed, and animal manure. Swamp muck and sea-weed are accessible to all who will take the trouble to procure them. My barn and hog-yards are so excavated and dug as to absorb the liquids passed into them.—Every spring and summer, after my barn-yard is emptied, I replenish it from time to time with swamp muck, peat, sea-weed, and other materials from the farm, which, with the animal manure produced by yarding my cattle, furnish me in the autumn with 200 loads of good compost, which I either stack in the yard, or cart on to the land I intend to plant in the spring. I again replenish the yard, giving me, with the proceeds of my hog-yard, from 100 to 150 loads more in the following spring. In addition, I have for two years past composted, in the field adjoining my peat bog, from 75 to 100 loads of peat, (thrown from the pit in summer or autumn) with sea and rock-weed, or ashes and animal manure, which I esteem of equal value to barn-yard manure. I estimate the value of a cord, or four ox-cart loads of barn-yard manure composted as above, at from \$4 to \$5. We esteem the value of this for a corn crop and the improvement of land higher than pure animal manure."

I give one more extract from a farmer of Berkshire county. He says: "I have used swamp muck for a number of years past with good results, by mixing it with yard and stable manures in the proportion of one-third to one-half muck, and consider it worth \$1 per load to use for agricultural purposes on soils that are a mixture of loam and gravel."

The testimony is uniformly in favor of composting muck with other manures. Its power of absorbing valuable liquid and gaseous substances is very considerable; and this makes it an excellent substance to mix with guano when the latter is to be used as a top dressing. The importance of a free use of dry swamp muck as an absorbent of the liquid manures of the barn and stable can hardly be over-estimated. The loss throughout the State from the neglect and consequent waste of these rich manures, which, with a little care, might all be saved, is almost incredible. The attention of farmers was but lately called to this subject; but the value of the substances is ac-

knowledgeed by some, and efforts are now made to save them by means of the use of muck and loam, either properly composted in the barn-cellar, or supplied daily to the stalls of cattle. No judicious farmer should neglect to save all such substances as tend to increase the value and productiveness of his lands. It is poor economy and bad calculation to buy concentrated manures, or to buy any manures abroad, till everything of the kind is saved at home.

From what has been said, we may infer that good dry swamp muck is worth on an average from \$1.25 to \$1.50 per cord; that it is best on light, loamy, sandy, or gravelly soils; and that it is valuable as a compost with barn-yard manures, or with guano.—*Second Annual Report of C. L. Flint, Secretary of Mass. Board of Agriculture.*

SOAKING WHEAT IN BLUE VITRIOL.

I beg to submit the following as my "usual way" of preparing seed wheat, in the firm conviction that if carefully and thoroughly carried out, there need be no apprehension of failure. For I may here add that a vast deal more depends on strict attention to the minutiae of this, as of most other agricultural operations, whether practical or merely experimental, than many, otherwise excellent farmers, may be disposed to think necessary. It is not enough to give general directions to a bailiff or yard-man, that you wish your seed wheat prepared after such and such a recipe—you must see to it yourself; and even assist at the most important points by your own personal exertions. I say this without meaning the least disparagement of either the care or judgment of your overlooker; who, when once in possession of your plan of operations, (only to be obtained directly from yourself) may, and ought, if conscientious and active, to be trusted to do in your absence what he is fully aware would have been done had you been present. But we must get on, or our steep will never be ready for the drill. Take then a tub or vessel of convenient form for holding three bushels of wheat, and a space of some six or eight inches beyond, for skimming, washing, and stirring.—Place this tub over a wider but shallower vessel, similar to the underback of a mash-tub; into which the wheat, when washed and skimmed, may by a cock or other means, be drawn off from the tub above. But we are forestalling matters. Prepare the steep as follows: Dissolve about three lbs. of blue vitriol in water (hot if wanted for immediate use, otherwise this is immaterial;) to this

add water enough fairly to swim the quantity of seed you intend to steep—say three bushels; into this liquor then sift gradually and lightly, by means of what in some places is called a reeing sieve, the wheat as above mentioned. The heavy grain will fall to the bottom, leaving the lighter portion, seeds of certain weeds, smut balls (if any,) and other rubbish, to float at the top. These must all be carefully skimmed off, and the main body of wheat below well stirred from the bottom, to make sure that the whole is thoroughly washed and skimmed. This process over, some recommend a prolonged immersion in the liquid of from one to three or more hours; but I never could see any necessity for this. In the first place its adoption would be attended with great additional inconvenience, to say nothing of the extra expense, from the necessary enlargement of the apparatus for steeping and washing a much larger quantity at a time than I have named. As soon, therefore, as you are satisfied that the washing, skimming, &c., is accomplished, and the liquor drawn off into the underback, empty the wheat on to the floor, which latter ought to be thoroughly washed and cleaned between the steeps, and, after spreading it about a little, sift over it enough slackened lime to facilitate the progress of drying. The wheat will be fit for drilling or sowing in a few hours, but if even delayed for a day or two will make no harm. The same liquor will serve several steeps, merely replenishing with fresh water and about half a pound of blue vitriol to each succeeding bushel of wheat. Such was my practice during many years of my farming life, nor did I ever experience any failure of plant from the use of this steep, though I certainly have from chamberlye applied too strong and immersed too long. How to account for “J. C. C.’s” failure I know no more than he does; but as he says it was sown when the ground was dry, is it not as fair to presume that the failure was quite as likely to have been occasioned by want of the requisite moisture to cause the seed to germinate properly as by anything in the composition of a steep in such universal use, and, with common care, so harmless as a solution of blue vitriol, even though much stronger than I applied it?—*S. Taylor, Gloucester.*

BEAUTIFUL FLOUR.—We have received from Harris Tysor, Esq., of Fair Haven, Chatham county, a bag of as beautiful Flour as we ever saw—that is, it makes as beautiful bread as any. It was accompanied by the following note from our go-ahead friend:—*Wayterville Observer.*

“I send down this week my second load of new wheat Flour. I send you a sample of it, taken out of the load, as a present, and wish you to try it and compare it with any other, North or South. This will not be better than an average lot. I intend to make as good Flour as comes from New York, and calculate to sell more Flour this season than any man in the State.

Yours, &c., HABRIS TYSOR.”

THE CUREULIO.

BY HENRY CROFT.

I notice in your June number, just received, a short letter from Mr. Bacon, on the subject of the Cureulio, and a proposition to employ sulphureted water, such as that of Avon for syringing the plum trees; and it may not perhaps be altogether uninteresting to you to know that a series of experiments are being made on this subject by a few amateurs of this city.

Some years ago in a paper published in the *Canadian Agriculturist*, I endeavored to account for the supposed efficacy of the lime and sulphur wash by the formation of a chemical compound—the sulphide of calcium—its gradual decomposition on exposure to the air, and slow evolution of sulphureted hydrogen gas, which is well known to be highly destructive to animal life. My experiments on this preservative were quite unsuccessful, and I was equally unfortunate in driving away the “Turk” by means of assafetida, a substance which you will allow is nearly unsurpassed as to odor.

Last year a lady amateur of this town tried, at the suggestion of a chemical friend, the action of sulphureted hydrogen, as evolved from the proper mixture, and subsequently of a peculiar compound well known to chemists—the hydrosulphide of ammonium. The trees thus treated were loaded with fruit, those unprotected had none!

This year two or three persons are trying a quantity of the hydrosulphide, and as soon as the fruit is thoroughly out of danger, I will send you the results. In my garden I am trying it on several trees, leaving others unprotected. A few cucumber phials are half filled with the liquid hydrosulphide, diluted with about two parts of water; every three or four days I add a little more of the liquid, or as often as its odor begins to diminish. It is scarcely necessary to remark, that the delicious scent of the garden is by no means improved by the process.

It is almost too soon to say anything with regard to the result of my own experiments, but I may state that on several fine plum trees, on which last year I had to search for a quarter of an hour in order to find an unbitten plum, I have now to look almost as long to find a bitten one. On a "Lawrence," the result has not been so favorable, about one-fifth or less being bitten; last year I had none on this tree.—*Horticulturist*.

POOR FARMING AN EXPENSIVE BUSINESS.

The truth is, poor farming is an expensive business. The cost exceeds the income. If from a very low grade of farming, which must of course be unprofitable, we ascend to a better condition of the art, we shall come to a point where there is neither loss nor gain; the income equals the outgoes; the ends meet, as they say. And this, if we understand these matters, is the very condition in which nine-tenths of our farming now is.

The farmer of a hundred acres puts on his farm in his own labor, in the labor of his wife and his children, in taxes, insurance, &c., \$500. And he takes off in some marketable produce or for home consumption, \$500. "The ends meet;" and if there were no better way he need not complain; for he is working his way through the world as quietly and as easily as most men; for the development of high moral qualities he has the advantage of most others; and what is more, he has the best possible means of training his children to those habits of industry and frugality which more than conspire to make them good men and women and worthy citizens. Let him not, therefore, complain. But if there is a better way, let him fall into it. We do not believe that farming is necessarily limited to the operation of putting on \$500 and taking off \$500, and living by the operation only because what is put on is mostly in the form of labor done by the family. If a farm will give \$500, with the labor of one man, it will give a great deal more with the labor of two men; and the excess will more than balance the wages and board of the second. Instead of putting on \$500 and taking off \$500, the better way is to put on \$700 and take off \$900; and then to put on \$900 and take off \$1,200. There is doubtless a limit beyond which the income could not be made to increase above the expenditures; but very few of us are in danger of going beyond the limit. There is much more danger of falling short of it. Our standard is too low. Men are afraid to trust their land, lest it should not pay them. It is the best paymaster in the world.—J. A. NASH, in *The Farmer*.

RAINY DAYS IN JULY FOR SIXTY-SEVEN YEARS.

MR. E. MERRIAM, of Brooklyn, has furnished some of the daily papers with a tabular statement, showing the number and dates of the rainy days in July of each year from 1789 to 1855, both inclusive. The details are too voluminous for our columns. We however copy the total number of rainy days in July of each year, as follows:

Year.	No. of rainy days in July.	Year.	No. of rainy days in July.
1789	9	1822	10
1790	3	1823	9
1791	3	1824	9
1792	10	1825	4
1793	9	1826	9
1794	8	1827	10
1795	9	1828	14
1796	13	1829	11
1797	6	1730	8
1798	12	1831	9
1799	4	1832	9
1800	7	1833	9
1801	8	1834	7
1802	7	1835	12
1803	14	1836	15
1804	8	1837	11
1805	5	1838	8
1806	9	1839	8
1807	9	1840	9
1808	12	1841	10
1809	13	1842	14
1810	9	1843	10
1811	9	1844	11
1812	9	1845	8
1813	10	1846	12
1814	9	1847	7
1815	10	1848	7
1816	5	1849	5
1817	10	1850	10
1818	9	1851	13
1819	7	1852	9
1820	7	1853	15
1821	8	1854	10
		1855	19

Total, 67 years. In only six of them did the rain in July continue more than four days consecutively, viz:

July, 1803,	rain fell from 23 to 28—6 consecutive days.
Do. 1807	do do 19 to 23—5 do do.
Do. 1829	do do 2 to 6—5 do do.
Do. 1836	do do 9 to 15—7 do do.
Do. 1851	do do 19 to 30—12 do do.

The duration of the rainy term in July of this

year has greatly exceeded that of any July for a period of two-thirds of a century.

The heat has been great, and the maximum has been at and above ninety degrees on ten days; at and above eighty and below ninety on fifteen days; between 70 and 79 on five days, and at 63 one day, viz: on the 21st. Lightning has been active on 21 days.—*American Agriculturist*.

TRANSPLANTING EVERGREENS.

It is understood this is not difficult. They are generally killed by deep planting and the want of mulching—the want of leaves from the woods or half-decayed straw, or tan, or something of the kind to keep the ground moist. Prepare the ground deep if you have time; take the hemlock or red cedar, spread the roots nicely on the smooth surface, cover three-fourths of an inch deep, put on four inches of moist leaves, and confine with brush—few will die. Shade during the first summer. A bush full of leaves set on the southern side is the best.

The nurseryman must do his duty. He must take the trees up well, and direct that the roots be kept moist and not exposed to the sun or air until planted. In the absence of moss or wet leaves, a wet sheet may be put immediately around the tops.—If we go to the woods for evergreens we must act the nurseryman ourselves.—*Prarie Farmer*.

REMEDY AGAINST THE RAVAGES OF THE TURNIP FLY.

A correspondent of the *North British Agriculturist* gives the following as a remedy against this troublesome insect:

Let the seed be put into a glazed pan, or any open vessel, and put to it as much rapeoil as will, when stirred together with a stick, be sufficient to make the seed moist. Next add as much sulphur as will, when again stirred together, cause the seed to separate. When properly mixed, all the seeds will have a coat of sulphur adhering to it; and it will be found that the ingredients, in addition to keeping off the insects in question, will be a great stimulant to the growth of the crop. The seed thus managed may be sown or drilled with the same convenience as if it were clean. Should more seed be prepared than is found necessary to be sown at one time, it will keep well and not germinate for twelve months to come. This simple remedy I have never known to fail, and has only to be tried to be appreciated.

From the Southern Planter.

SHEEP.

I was for some years unsuccessful in sheep raising and wool growing, having all of the time a fair chance for success. Year after year, I added to my stock, buying from droves from the mountain drovers—nearly every one of which I lost; as was said by my old negro man who attended to them, “master, these drove sheep have the distemper, or some other ailment.” At length I found the ailment was from loss of teeth by old age. I thenceforward ordered him at shearing time to put a death-mark with tar upon every sheep which had bad teeth. The following fall I fattened four or five muttons from those bearing the death-mark.

To make a sheep fat is one of the easiest things imaginable. You have only to keep him gentle and at command, and you may make him thoroughly fat in from two to four weeks, by giving a gill or two of meal, mixed with moistened straw, chopped turnips, or cabbage leaves three or four times a day.

There is a popular error extensively prevalent, that to stall beef or mutton, you must stint them in water. This is against nature and against reason. Let them have free access to water, and they will very rarely drink enough to hurt them.

It is hard to forego the pleasure of eating fat lamb and green peas in their season. But the true policy of those who go for the fleece and meat, is to spare the young and slaughter the old. In my opinion, no provident sheep and wool grower will slaughter an ewe lamb; and even the young rams ought to be castrated and spared, until they become full grown wethers.

There is a foolish popular prejudice against bull-beef and ram-mutton. Any man, yea, even the most fastidious lady, who loves good beef and mutton, can easily be cured of this prejudice. Let the animal be castrated before cutting his throat—and bled nearly to death by the operation. Then let his intestines, &c., be taken out as soon as possible; the cook can arrange the balance, by first salting and then steeping in cold salt water awhile, then parboiling so as to make it tender before baking, or roasting, I have tried it, under my own supervision.

T. STREET.

June 18, 1855.

A BALE IN COTTON, in Egypt, is 90 pounds; in America, a commercial bale is 400 pounds, but is put up in different States, varying from 280 to 720 pounds. Sea-Island cotton is put up in sacks of 300 pounds.

From the Southern Farmer.
WOODLAWN, January 15th, 1855.

MESSRS. EDITORS: During the past year I made an experiment to test the effect which the pulling of fodder would have upon the corn from which it was pulled. The result surprised me not a little; and as I think the experiment a valuable one, I herewith send you a full statement of the manner of conducting it, and the result. I selected a portion of my corn field in which the rows ran perpendicularly to a road, and counted sixty rows along the road. I then measured seventy yards along the rows on each side of the piece designed for the experiment, and marked off a line parallel with the road at seventy yards distance from it.—This embraced 4,200 hills, from the alternate rows of which, the fodder was stripped to the top, leaving the intermediate rows untouched. After the fodder was cured, I weighed it, and found that I had just 200 pounds, which, at \$1.25 per cwt., is worth \$2.50.

The two parcels of corn were kept entirely separate until the test was fully made, which was done in the following manner, viz:

Having the two piles before me, and wishing to ascertain the number of ears in each parcel, I commenced with that from which the fodder was pulled and counted 75 years into a basket, from each draft, until I had weighed the whole of it. I then went through the same process with that from which no fodder was pulled. By thus counting, I found that I had upwards of 100 ears more in the portion from which the fodder was not pulled. This surplus I divided between the two parcels, so as to equalize the number, and found that I had 1,119 pounds in the former, and 1,362 pounds in the latter portion, being an increase of 243 pounds in favor of not pulling fodder.

I then shelled the same quantity from each parcel, to ascertain the portion to be deducted for husks. This amounted to one-fifth in each case.

The result gave me 195 pounds of shelled corn, in the place of 200 pounds of fodder, which was suffered to remain on the stalks.

This lacks one pound of being $3\frac{1}{2}$ bushels, which, at 80 cents, would give \$2.80; showing a loss of 30 cents, which is equal to 48 cents per acre, besides the labor of pulling and securing the fodder.

To show that no exaggeration existed in this experiment, the ears were counted, and the number equalized, as before stated. The inequality which existed may be accounted for in two ways.

First, many ears were broken off in pulling the fodder; and secondly, many were prevented from maturing by having the fodder pulled from the stalks.

It may be supposed that this fodder was pulled too soon. In the common acceptance of that term, such was not the case. I suffered it to stand until it was thoroughly ripe, or what is termed, "suffering for the want of pulling"

This experiment shows an entire loss of 18 bushels to the hundred, or one sixth part of the crop.—The above was an experiment allotted to me by the Prince George's Hole and Corner Club, of which I am a member. If you think it worth publishing, you are at liberty to use it in that way.

Yours, very respectfully,
JNO. H. BATTLE.

THE TAMARIND IN VIRGINIA.

William G. Singleton, Esq., of Winchester, Virginia, communicates the following to the Commissioner of Patents:

"Of all the ornamental trees propagated among us, either foreign or native, there is none, in my judgment, more desirable than the tamarind. Its growth is rapid, its form symmetrical, its foliage beautifully delicate, and is altogether highly ornamental; besides, it is perfectly free from blight, as well as from the depredations of insects. If cultivated on our western prairies, it would, doubtless, form a valuable acquisition.

"From the growth of some tamarind seeds which I obtained from a confectioner's shop some eight years since, I have a tree standing in my yard eighteen inches in circumference. The past season it perfected its fruit, which, in quality, was equally as good as that imported. The seeds may be sown in drills about four inches apart, and covered from two to three inches deep with light rich soil. They may be sown either in the fall or spring. If in the latter, they should be exposed to the weather during the winter previous, in order that their hull or coverings may be acted upon by the frost. When grown to a height of three or four feet, the young trees may be transplanted in the sites where they are permanently to remain."

BOARD MEASURE.—Boards are sold by face measure. Multiply the width in inches of any number of pieces of equal length, by the inches of the length. Divide by 144, and the quotient is the number of feet, for any thickness under an inch. Every fourth inch increase of thickness, adds a fourth to the number of feet in the face measure.

For the Arator.

MY DEAR ARATOR: Having had some experience with the winter oat, and believing it greatly superior to any of our common varieties, I ask leave to recommend it through your pages.

It stands the winter as well or better than wheat, if sowed early; it grows several inches taller than the common oat; the seed is heavier and more abundant; it matures earlier, and is much safer from the effects of drought than any other kind, and, therefore, a much more certain crop. Moreover, it is generally more convenient to sow in the fall than in the spring. All these I consider very important considerations.

I have heard some complaint in Warren and in this county, that they were not thick enough the past spring; but this, I believe, was invariably owing to late sowing, in rough dry ground. In the first place, the seed could not come up well, and in the second place, the tender plant was so badly supported or protected, when up, against the frost and freezes, that much of it perished. This may be avoided with certainty by early sowing, which ought to be commenced by the first of September and completed by the middle of October; though a tolerable crop may be relied upon, if sowed at any time thereafter, up to the period of seeding the spring oats, provided the soil is finely pulverized and the seed well put in.

Another advantage of early sowing is, that it will insure good winter pasturage for colts, calves, sheep, &c. The grazing is equal, if not superior, to rye, without injury to the crop, which, on poor land, especially, I will guarantee will be twice as large as would be yielded by the common spring Oats.

They are better than the common oats, even if not sowed until the spring. This is my experience with the winter *Oat*. If any of your readers have a more correct knowledge of this crop and the manner of producing it, the public and your humble correspondent will be thankful for the information.

Very respectfully yours,

WAKE.

REMARKS BY THE EDITOR.—The above statement in regard to the nature and culture of the Winter Oat, accords with our own experience in raising this valuable variety; and we can also add, that we find it to be a *self-seeding* plant, which is an important consideration, if it be desirable to raise two successive crops on the same land, or to make a winter pasture of the field where one crop has grown, which may be secured by turning under

the stubble by the last of July. We sowed a lot in the fall of 1853, which produced a fine crop the following harvest. After the oats were cut, the lot was planted in corn, cultivated according to the plan of *clean culture*, and a fine crop secured.—After the corn was laid by, the oats, which had been shattered and left on the land in harvesting, came up thick enough for a good stand all over the lot. It grew off finely, and was kept grazed down all the winter; and notwithstanding the long and severe drought of the spring, a second first rate crop of oats was gathered from the same ground. The stubble was then turned under—the ground again plowed a week or ten days after, to put it in good condition for turnips; and when the plow was again put in for the last time, to prepare for sowing the turnips, on the 14th of August, the oats had come up so regularly and beautifully, we were almost tempted to let them remain for a third crop.

For the Arator.

RAISING HORSES.

By your leave, Mr. Editor, I will occasionally call the attention of the farmers of North Carolina to this subject, which all must admit to be one of vital importance.

The amount of money that is annually sent out of the State to pay for *young* mules and *broken down* or *vicious* Kentucky horses, is enormous. It is a perpetual and serious drain upon the wealth and prosperity of our State, which can and should be promptly arrested. We can raise, profitably, our own mules and horses; and in some sections of the State can easily raise them with profit for the foreign market, which I shall show hereafter. I hope Old Rip will not be staggered at this proposition; or, that he will at last wipe his eyes and wait a little for proof, and not hastily yield to his old conviction, that "nothing good can come out of Nazareth." Indeed, I hope the farmers of North Carolina are now sufficiently wide awake, to feel pride, self-respect and patriotism enough to resolve at once that the former state of things shall no longer exist—that our home demand for horses and mules, shall not only be supplied by home production, but that our neighbors who have to buy, "will find it to their advantage to call and examine our stock before purchasing elsewhere."

At present, I shall close by asking serious attention to the following remarks of a correspondent of the Southern Planter, which go far to demonstrate the truth of my positions.

Yours, &c., YANCY.

"My plantation requires the labor of about seven horses, six for work and one for the saddle. I keep nine, eight mares and a stallion. These give me a regular team at all times, and the two extra horses enable me frequently to make a *push*. From these I raise about three colts a year. I sell off all my geldings, some at two and some at three years old. Of my mare colts I keep the best and sell off old mares, at from 8 to 10 years old, to make room for them. The mares bring as much at this age as at any other. In this way I constantly renew my stock, and my horse account at the end of nine years farming, stands :

Cost of original stock,	\$ 705
Stock sold and on hand,	2,781

Showing in 9 years a profit of	\$2,076
--------------------------------	---------

Which, in my opinion, is better than keeping geldings or mules, and having to renew your stock every 10 years. To my colts in raising, I pay no very particular attention, not as much as I ought; I graze them about eight months in the year, and the other four, feed them as I do my farm catt'c, except in very bad weather, when I give a little corn, not two barrels a piece, certainly. I have consequently never raised high priced horses, and am, as you know, a poor hand to sell for a big price, (witness a trade or two *you* had with me in times past,) and yet I have always a full team and have realized a handsome profit from horse raising. The profit would be very great to one who would bestow more attention than I do in raising colts, and think less of *conscience* in selling them. I am no horse doctor, yet in nine years I have lost but one horse. For the numerous aches and pains that horse "flesh is heir to," I give *onion juice and whiskey* (which, for *cholic* by-the-way is worth all the physic in an apothecary's shop) and, when I think of it, in the spring of the year mix onion juice with my horse feed once or twice, which conduces greatly to their health. I am a firm believer in the *blinding* influence of "wolf teeth" and pull them out whenever I find them; and I hold it to be a flogging offence to *knock* out a horse's eye. I have never had a horse to lose an eye from any cause. I flatter my waggoner into taking care of his horses; never say a word to him for *stealing* food for them, but would "mount him in a minute" for taking it *from* them. If I have a *mischievous* horse, I sell rather than yoke him, and as for sore backs or rubbed shoulders, I had rather be caught with a hole in my boot or a patch on my breeches, than have such a thing on my farm. I hold it to be cheaper to raise than buy horses;

but if it were not, I should prefer raising to buying out of droves. These are generally of the refuse stock of the western country. Western men don't sell their best horses, and the chances are ten to one that a "drove horse" is sold for some fault or defect. Why should we not all raise our own horses? Yours, truly,
IVY CREEK.

For the Arator.

GRASSES AND GRAZING.

MR. EDITOR: I have read with much interest the following article from the Southern Planter, and as the climate and soil of Virginia, in corresponding localities, are similar to those in North Carolina—as the policy of the farmers of both States is the same—as the raising of grass and grazing have been too much neglected in North Carolina—and as the season for immediate preparation, (and many of our people are desiring to adopt the system of raising grass artificially), is at hand, it will be read with much interest and profit by your readers. W. R.

"I have nearly every kind of grass grown in Virginia, and for many years have made a support by grazing cattle and sheep.

Every grazier is bound to have grass; the farmer and planter ought to have it. The quickest way to improve land is by ploughing down successive crops of oats, rye or peas; but the cheapest way is to plough down the perennial grasses, after they have stood three or four years untouched by scythe or tooth.

The kind of grass to be sown should be adapted to the locality; for although nature may be coaxed a little, yet she cannot be whipped or spurred out of the track which the Creator chalked out. It is true that Indian corn may be grown either in the torrid or in the temperate zones; but let it be remembered that although a northern corn can be grown in a southern climate, a southern corn cannot grow in a northern climate. If a northern corn be transplanted in the south, it will in a few years become a southern corn; take the same corn directly back to its original place, and the frost takes it; but move the annual produce only a few miles towards its original home, and when there all is right again—it is what it originally was. The same cannot be said of the grasses; for so far as my experience and information go, they are all now what they ever were.

Some of our grasses are annuals, some are perennials, some are natural, others foreign or artificial.

Of the annual grasses, I say nothing, because they are worthless when compared to the perennials.

Of all the natural grasses, we have in Virginia, the green sward, the white clover and the Virginia blue grass; all of which are superior for grazing purposes; especially for sheep. The green sward and white clover will generally be found growing together, and on rich land may be cut for hay twice in the year; but because of their difficulty of curing, better for this purpose have some other. The natural place for green sward and white clover is on cool, moist land, containing potash in abundance, as well as a due portion of lime and gypsum. If the potash is wanting it must be supplied either in the manufactured article or in the ashes. Only sow the ashes and the green sward will soon show itself without sowing; without the ash or ashes you have no green sward. My mountain home contains, perhaps a superabundance of potash, produced by the decomposition of the felspar and green stone rocks, and ashes from the burnings of woods and weeds; and here I have these grasses in perfection.

About thirty years past, the blue grass was growing all over Amherst, and had exclusive possession of the larger mountains: but now the green sward has taken its place; nature has ordered a change, and I am glad of it, for the green is now far preferable to the blue. But I have no doubt that in time to come, perhaps hundreds or thousands of years, this same blue grass seed will be called forth by nature; and then it will not be the dwarf seen here in my day, but a superior plant. Although aware of the difficulty of performing the task, I will attempt to speak of the adaptation of the different grasses to the different soils and locations.

On poor land, dry, sow herds grass and ribbed plantain.

On poor land, moist, herds grass.

On poor land, wet stagnant, herds grass.

On poor land, wet slope, herds grass.

On rich land, dry, we have none.

On rich land, moist, if warm location, sow meadow oats, Italian ray and Kentucky blue, If cold location, sow timothy, orchard.

On rich land, wet slope, if warm location, sow velvet, ribbon, Kentucky blue, herds. If cold, timothy.

On rich land, wet stagnant, herds.

On sand, cold location, something may grow.

On sand, warm location, nothing unless irrigated.

By cold land, I mean our mountains and northern slopes, including the valleys beyond the Blue Ridge. By warm land, I mean all other locations

in our State. In Virginia, thousands of cattle die annually during winter for want of food; particularly eastward from the Blue Ridge. Better kill one half for the dogs and buzzards, to ensure the life of those remaining, and have them in good condition in the spring; or better still, drive the surplus across the Blue Ridge and sell them. Better be without cattle than sustain such loss by their deaths from poverty; aye and take into the account too, the death of the land, caused by the eternal treading and gnawing of the cattle to get the remains of a weed. If I were the owner of poor land, I would certainly not let a hoof go on it. A cow or two and my horses, should be kept in a house or pound, and fed on corn, millet, clover, &c., during the grass season. I would not sell my surplus winter cow food, but spread it neatly over my poorest lands, after which, I would call that spot no longer by any ugly name, such as poor, bony, sterile, miserable, barren, galled, dry, worthless, sickly, dead. It seems to be the general opinion that the offal of the farm should be trodden by cattle into a muck, before it is a proper manure; but my experience, and indeed, reason, teaches me that this is a great mistake. 'Tis true that the cows feet do not destroy or injure the salts or oils in the vegetable matter, but the rains and evaporations do. And not only this, but another heavier loss is sustained by the practice above alluded to, that is, the lifting, carting, and spreading three times as much water as manure. I have been an experimental farmer, and now say, the owner of land, particularly that which is poor, had better have no cattle than be compelled to feed to them his corn stalks and straw. The renter is a privileged character; he can do as he pleases; he spreads no manure, of course. Put your corn stalks on the most convenient galls and gullies; and your straw in spring, neat and clean, on wheat, rye, or oat fields; only remember not to put oat straw on wheat or rye. Or if from sickness or other cause, you cannot complete this job in due time, then scatter your remaining straw amongst your growing corn, immediately following the last ploughing. This manner of manuring will force a good ear on a small stalk—in part, attributable to the retention of moisture. Straw used in this way will produce more profit than double its original value: then why not clear out the cattle, for one year at least, and then you have annually the overplus grains, shucks and corn blades as their better food. Much better live poor and go ragged a few years until your lands are improved, than go starving all your life.

Let not the man who has numbers of poor acres

and poor slaves, think that he is excluded in the above remarks. Who are the rich? he who has the bone, the sinew and mind; ready all to go right ahead with his business. who are the poor? he who will not adapt his mind to his occupation; and the consequences—ah! oh!

The velvet grass is of pale green color, grows from two to three feet high, long boot and short blade, both velvet like; seed much like the ribbon grass only more chaffy and light. It grows more luxuriant in soft, running water, therefore, I would recommend it for all slopes which can be irrigated at pleasure by soft or warm water. This and the ribbon grass are the only grasses which will bear warm water, in my knowledge, and it is only necessary to take the water from these just for the time for enting and enring the hay.

The ribbon grass grows from two to three feet high, and is easily distinguished from any other by the blades having all manner of white stripes. It blossoms profusely, but I have never known it to bear a seed. It propagates rapidly from the roots.

The oat grass grows from three to five feet high, may be cut for hay three times in the year; no stock is fond of it either green or cured, yet as it puts up early and continues late, it is valuable.

I send a head of Virginia blue grass, long; a head of Kentucky blue grass, short; ribbon grass, shorter; velvet grass, shortest; three blades of ribbon, one blade velvet, and a leaf of the wild pea—all dwarfs, for convenience.

ZA DRUMMOND.

Amherst, July 10, 1855.

For the Arator.

INCREASE OF POPULATION.

Increase in White Population in N. C. from	1790 to 1800	49,560
"	1800 " 1810	38,646
"	1810 " 1820	42,790
"	1820 " 1830	53,643
"	1830 " 1840	12,027
"	1840 " 1850	69,158
Increase in Slave Population in N. C. from	1790 " 1800	32,724
"	1800 " 1810	35,528
"	1810 " 1820	36,193
"	1820 " 1830	40,584
"	1830 " 1840	— 216
"	1840 " 1850	42,731

MR. LEMAY: The above exhibits a singular increase in population from 1830 to 1840. If you think it worthy a place in your paper, print it, as the work of idle

CURIOSITY.

For the Arator.

LEACHBURG, August 16, 1855.

MR. T. J. LEMAY. DEAR SIR: I must say, and say truly, that your valuable paper, the "ARATOR," is the best I have ever read. And if every farmer in the country would contribute their mite, with their money and their pens, you would be able thereby to advance in the cause of improvement; and I have no doubt would be the means of improving their farms, and filling their purses.

Yours respectfully,

A. J. LEACH.

P. S. I expect to have on exhibition, at the next State Fair, the Big Ox, HENRY CLAY, as fat Beef.

Yours, A. J. L.

ROWAN AGRICULTURAL SOCIETY.—A called meeting of this Society was held in the Court House here on Tuesday last, John D. Johnston, in the Chair. The meeting was addressed by Dr. Summerell, H. C. Jones, Esq., and Dr. John Foard. The meeting after an unsuccessful effort to obtain new members, adjourned to meet again at the Mineral Spring, on the last Thursday in September next.

We cannot but be surprised that a Society which is calculated to do so much good for the agricultural interests of Rowan, should be so poorly encouraged. If the farmers will not step forward and do something to benefit themselves, it is idle for them to complain that their interests are neglected by the State. The experience of every country where such Societies have been organized, unite in proclaiming their beneficial influence.—*Salisbury Whig*.

WHY DOES LAND PRODUCE WEEDS.—Because there is more *fluid*, or fibrous matter in the soil, accumulated by ages of the growth and decomposition of vegetation, than there is of that property required for the crops we wish to raise.

As we have often said, "burn a plant and the ashes will show what the soil is composed of."—The ashes are what is drawn from the earth. By the decomposition, what was drawn from the atmosphere, has been liberated and escaped in the form of gas. The ashes are mineral, and never exist, naturally, in the atmosphere.

The ashes of all plants, consist of the same substances only in different proportions. Like soap, which is grease and alkali, but when properly combined are neither, but a new compound. So with soils. If the compound is largely wild, or vegetable, it will produce weeds, make an excess of phosphate of lime and it will as naturally produce wheat; give it an excess of alkali and it will produce potatoes. A farmer should fit his crop to the soil, or his soil to his crop.—*Ohio Farmer*.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.

RALEIGH, N. C. SEPTEMBER, 1855.

WE regret that in consequence of protracted domestic affliction, we have been able to pay but little attention to the Editorial department of this number. Our readers will, however, be amply compensated by the substitution of more valuable matter in the shape of selected articles and communications, on subjects of vital importance to the people of North Carolina. Let no one fail to read, especially, the articles headed, Agricultural Improvement; Clovers and Grasses; Experiments in pulling Fodder; Grasses and Grazing; Horse Raising; Culture of Lucerne; Winter Oats; Swamp Muck; Sheep, &c., &c. Indeed, all the articles in this number are interesting.

STATE FAIR.

THE time for holding the State Fair, (we would remind our readers,) is rapidly approaching. We trust the number of persons who have already made up their minds to attend is more than double that of the thousands of spirited and patriotic citizens, whose agreeable and profitable meetings and greetings, on the two former occasions, have sent an electric influence from centre to circumference of the State, which will never cease to exert a most salutary influence upon her greatest and highest interest; and that thousands more, yet undecided, will at once resolve to do themselves and the cause of improvement the service to be present, and, if possible, to bring with them something to contribute to the exhibition. There is not a moment to lose in making the necessary preparation. Let every one commence, forthwith, to make his arrangements, and so dispose his business before hand, as to be ready to devote a week to this highly interesting and instructive assemblage of the friends of improvement. All may thus make it to themselves the most profitable, as well as delightful, week of the year.

We address not only those who reside in the neighboring counties, at what is called convenient distances, but the people of the whole State—in the most remote counties, at the most inconvenient distances. They are all equally and deeply interested, and will be amply repaid for any and all of the patriotic sacrifices they may make to participate in this great and important movement. *Every County should be represented, with specimens and samples of men, and productions of skill and industry.* Their delegates should be here in great numbers, with appropriate emblems and banners, ready to take their

places in the grand procession, and contribute their full share to the onward march and nimate triumph of the pleasurable and peaceful pursuits of industry and civilization. We therefore, call upon leading men in every county, who stand before our mind's eye, whom we know to be public spirited, intelligent and influential, to see to it, that their respective counties shall be represented at the Fair. Let them remember, in the West as well as in the East, that this is a GREAT STATE MEASURE. There is nothing local or sectional in it. If anything, the weaker and more remote sections are more deeply interested in its success than any others. We could easily demonstrate this, and if time and circumstances allowed, we should avail ourselves of this occasion to do so; but a little reflection will convince the intelligent mind of its truth, and indicate to the patriotic his duty. The fact, that in this matter, all is to be accomplished by the voluntary action of the citizens, and that everything, in such cases, depends upon the zeal and activity of a few leading spirits, makes it imperative upon that few to come forward and exert themselves in the cause, which of all others, of a secular nature, is dearest to the masses, until the people all over the State shall be fully aroused. There are leaders in every county, who, like Roderick Dhu, in a political campaign, have only to give one sound of their whistle, and the face of the earth is immediately alive—not with “plaided warriors armed for strife”—but with excited partisans rushing to—a “mass meeting!” If the remark of Dean Swift—that he who makes two blades of grass grow where but one grew before, deserves more of his country and better merits the gratitude of mankind than the whole race of politicians put together—be true, would not these chiefs be employed in a nobler work, by sounding their whistle in the cause of improvement, and summoning their followers to the State Agricultural Fair? That many of them are not engaged in agricultural pursuits, is no excuse for a neglect of this duty. It is well known that professional men have much scientific agricultural and mechanical knowledge, and when they turn their energies to it, make the best farmers; and, moreover, their interest is so interwoven with manual labor pursuits, and the prosperity of these pursuits are so indispensably necessary to the existence and support of civil government and society, it becomes the duty of good citizens of all professions to take an active part in all measures intended for their advancement.

Before we close, a word to the citizens of Raleigh and Wake County. They have a peculiar part to perform in the great work before us, and THE STATE EXPECTS THEM TO DO THEIR DUTY. They not only labor under heavy responsibilities, but have a deep

interest in the success of the *Fairs and the permanent location of the Fair Grounds at the Seat of Government*. Let all, therefore, set about to do their best to make the Fair attractive and agreeable. First, let all prepare something to carry to the Fair; secondly, let all become members of the State Society; and, thirdly, let all be liberal and zealous in manifesting their interest in this great *State* enterprise. Let the citizens of Raleigh make it known beforehand, that their cousins, friends and acquaintances from the country will all be welcome visitors during the Fair—that the string of their latch will be ever outside of the door, and the latch ready to fly up at the call of visiting strangers from whatever quarter. Let the people of all Wake County open their doors, and invite the whole State. The hospitality will be appreciated and reciprocated. *Nothing will be lost—much may be gained*—an inexpressible amount of happiness and pleasure at least.

THE FAIR AT HENDERSON.

We “take the responsibility” of inviting the people of the State generally to the Union Fair, to be held at Henderson on the 10th, 11th and 12th of October. We know the people of Granville, Franklin and Warren well; and a more kind and hospitable, as well as intelligent, liberal and enterprising community cannot be found on the continent. The highest degree of social enjoyment, and the most interesting and instructive exhibition may confidently be expected, on the occasion of their approaching Fair.

PROBABLE PRICE OF WHEAT.—The “American Farmer,” published at Baltimore, states, upon what it regards as reliable authority, that George Peabody, Esq., the eminent American banker in England, has given earnest assurances to his correspondents in the United States that all the grain that can be spared in this country will be required in Europe the coming year. Other commercial authorities advance the opinion that fair prices for wheat will be sustained at home during the whole of the ensuing year. They argue that, the supplies from Dantzic and the Russian ports being cut off, all the surplus crop of the United States will readily find a market in England or France. If these hints, or speculations, be well founded, our farmers need be in no haste, notwithstanding the immensity of the crop, to force their wheat into market, as they seem to be doing in some sections, on account of the constantly diminishing price.

We call the attention of our readers to the Prospectus of the *Scientific American*, a paper that every one ought to read.

We are pleased to place on our exchange list the *Carolina Pennant*, a neat and spirited weekly paper, just commenced in this city by Messrs. J. F. Miller and L. N. Keith—two very steady and industrious young men raised in our city, whose laudable efforts to get a foothold deserve encouragement.

PEARS AND PEACHES.

We invite the special attention of our esteemed correspondent, “Amateur,” and our readers generally, to the following interesting communication:

For the Arator.

DEEP RIVER, MOORE COUNTY, August 22, '55

MR. EDITOR: In the last number of the Arator, I was much pleased with an article on Fruits by Amateur. I would like to add to his list of peaches both the Georgia and the Kensington. Among a large number of varieties, they are my best soft peaches. But my object in writing this, is to call your attention to a North Carolina seedling pear of superior excellence—a brief history of which may be interesting to such subscribers as Amateu. Mr. Joshua Lindley, ten years ago, presented my wife at a Christmas a few pears. (the variety not recollected) I carefully planted the seed, only one of which succeeded. It has borne several times; this summer having nearly a bushel on it: it is a most luxuriant tree, the young wood of bright yellow, the limbs inclined to grow straight up. I have one on my table quite ripe, measuring nine inches and a half in circumference. It is nearly perfectly round; yellow skin, with a blush of red on the sun side; the flesh white, sweet and finely flavored.

Intending to remove it to another farm next winter, I am anxious that so fine a native should not be lost under any circumstances; therefore, I will take pleasure in sending grafts to Amateur or any of your subscribers, free of cost, who will furnish me with their address. Yours,

A SUBSCRIBER.

Address, C. C., Caribonton, Moore County.

ONIONS FOR CHICKENS.—The following is from the London Farmer's Magazine, and may have value.—We know nothing as to its truth.

Onions seem to be a preventive and remedy for various diseases to which domestic poultry is liable. Having frequently tested their excellencies, we can speak understandingly. For gapes and inflammation of the throat, eyes, and head, onions are almost a specific. We would recommend feeding fowls, and especially the young chicks, as many as they will eat, as often as twice or three times a week. They should be finely chopped, and a little corn meal added.

HOW TO GET THE REAL FLAVOR OF COFFEE.—In Kinkston's "Forest Life in Ceylon," are the following hints on the preparation of Coffee, derived from long experience: The subtle aroma which resides in the essential oil of the coffee berry, is gradually dissipated after roasting, and of course still more after being ground. In order to enjoy the full flavor in perfection, the berry should pass at once from the roasting pan to the mill, and thence to the coffee pot, and again after having been made, should be mixed at a boiling heat with hot milk. It must be bad coffee, indeed, which, if these precautions be taken, will not afford an agreeable and exhilarating drink. Two great evils are constantly perpetrated in England, in its preparation, which are more guarded in all other countries, and which materially impairs its flavor and strength—keeping the coffee a considerable time after roasting and grinding, by which its strength is considerably diminished, and mixing the milk with it after it has been allowed partially to cool.

A VALUABLE COMPOST.—Near every dwelling, but a little out of the way, there should be a place, vat or cistern prepared, where all the scrapings of the door-yard and litter from the garden can be conveniently deposited. Where, likewise should be thrown all the woollen rags and other refuse stuff, such as old boots and shoes, bones, &c., usually committed to the flames by the neat housewife, upon every return of that ever to be dreaded "festival" commonly denominated "house cleaning!" Into this receptacle throw all your brine and soap suds on washing days, and ashes and lime rubbish, where leeches are emptied; add occasionally a wheelbarrow load of muck, loam or turf, and you will find at the end of the year, that you have a quantity of excellent manure, far more valuable for many purposes, than barn-yard manure.—*Ontario Times.*

A NEW WAY TO COOK CHICKENS.—The following is highly recommended: "Cut the chicken up, put it in a pan and cover it over with water; let it stew as usual, and when done make a thickening of cream and flour, adding a piece of butter and pepper and salt; have made and baked a pair of short cakes, made as for a pie crust, but rolled thin and cut in small squares. This is much better than chicken pie, and more simple to make. The crusts should be laid on a dish, and the chicken gravy put over it while both are hot."

HOW TO DRY FIGS.—"Those which are to be dried are left on the tree till they are dead ripe, which is known by a drop of sweet liquid that appears hanging from the eye. The figs, being gathered, are placed on wicker hurdles, in a dry, airy shed, and

when the dew is off, they are exposed every morning to the sun during the hottest part of the day.—To facilitate the progress of drying, the figs are occasionally flattened with the hand, and in moist, dull weather, they are placed in rooms warmed by stoves. When they are thoroughly dried, they are packed in rush baskets, or in boxes, in layers, alternately with long straw and laurel leaves, and in this state they are sold to merchants. In some parts of the South of France figs are prepared by dipping them in hot lye, made from the ashes of the fig tree, and then dried; the use of the lye being to harden their skins."

PROVISION AND FRUIT PRESERVATION.—John C. Schooley, of Cincinnati, Ohio, obtained a patent on the 13th of last month, entitled a new process of curing meat. The object of this invention is the maintaining of a dry atmosphere in summer, in an apartment cooled by ice, so as to enable him to cure pork, beef, &c., during the summer as well as during the winter months. He has ascertained, he informs us, by actual experiment on a large scale, that hogs and beef cattle can be killed, and the meat cured in summer, with nearly equal success as in the best winter weather. His plan is, to pass the air for his building over the surface of ice, which thus reduces its temperature, and makes it deposit its moisture before it enters the curing room. He commenced operations in April, last year, and cured \$15,000 worth of pork, hams and shoulders, with only a loss of about seven per cent. The temperature in the curing room ranged at from 39° to 48°, when it was from 90° to 95° in the shade outside. The chamber was entirely free from moisture and impure air, whilst in all other places heretofore used for summer curing, the curing chamber was always dripping with drops of water hanging to the ceiling or running down the sides of the apartment, creating an impure atmosphere, and the result of curing in this moist air was disastrous, showing a loss in spoiled meat of not less than 20 to 40 per cent., or even amounting to 60 per cent., which has heretofore prevented the summer curing process from being of any commercial value.

A CURE FOR RHEUMATISM.—Lemon juice is recommended as a certain cure for acute rheumatism. It is given in quantities of a table-spoonful to twice the quantity of cold water, with a little sugar, every hour. The effect of the lemon juice was almost instantaneous in one case mentioned; in ten days the worst case is cured, and in seven the other was able to go out, and there was a flexibility of the joints of the cured, quite unusual in recovery after other modes of treatment.

From the Southern Planter.
TO DRY DAMP WHEAT.

When my wheat is damp I use the driest and cleanest plaster; perhaps calcined plaster will do best, as it is more absorbent of moisture, and dust the bulk well over, taking care to mix it thoroughly. As soon as you find the Plaster to feel doughy, I run it through the fan and re-apply the Plaster if necessary. It gives the wheat a lively appearance and none will stick in the sieve. Lime will dry the wheat, but some of it will stick to it, and give it rather a dingy look, which detracts from its looks, and some millers object to it on that account, but I have had flour made of a remnant of my seed wheat, and thought it improved the quality of the bread.

It is said lime water is better and more wholesome than soda. I have tried lime water, and think it improves the quality of the bread.

Yours truly,

N. M. OSBORNE.

Willow Hill, P. G., July 16, 1855.

[It can be calcined very easily by any one. Fill a large iron pot with it and put fire under the pot, just as if to boil water. In a short time it will bubble furiously, as if it were boiling. The process is complete when the Plaster begins to get lumpy. If a stick is then inserted in the mass it will adhere to it, whereas before the operation it will run off from the stick like sand.—Ed. So. Pl.]

SHEARING SHEEP BY MACHINERY.—The *Scientific American* announces the fact that a Michigan Yankee, by the name of Palmer Lancaster, who lives in Burr Oak, in that State, has invented a machine to shear sheep, and which will probably put the old sheep-shears out of sight. It thus describes its operation.

"The machine, which is small and neat, is hung by a strap to the arm of the operator, and placed on the body of the sheep to be shorn. By simply turning a handle back and forth, and moving the machine over the body of the sheep the wool is made to fly off in double quick time. It is well known that the most experienced hands at sheep-shearing do not cut the fleece even: and besides, the skin of the animal is invariably clipped out by the shears in many spots. This instrument cuts the fleece rapidly and evenly, never cutting any part of the fleece twice: and it avoids cutting the skin of the animal: it is therefore a humane as well as a labor saving contrivance."

LIME AND SALT.—A discussion took place last week in the N. Y. Farmers' Club, respecting the combination of salt and lime. It has been said that salt and quicklime, when mixed together, unite chemically, and form carbonate of soda and chloride of lime. This was denied by Mr. Judd, in opposition to some chemists present. He asserted that no chemical change took place in the mixing of these substances, and requested those who thought differently to furnish respectable proof to the contrary. This was not done, and he remained master of the contest. We rather think he is right, for we cannot conceive how carbonate of soda could be produced from a mixture which contains no carbon.—*Scientific American*.

BUTTER FROM GREEN RYE FEED.—Benjamin Garrigues, one of the most respectable farmers of Montgomery county, Pa., who has had over forty years of practical experience, writes to the *German town Telegraph*, under date of Upper Dublin, May 16, that he has been mowing fall-sown rye for over three weeks; and the result has been that he has made as much milk, and of as good quality, as could have been obtained from the best of pasture. He sends a sample of spring made butter, which the editor pronounces "excellent, high-flavored, and of a deep golden tint." Mr. G. sows rye for pasture upon ground designated for potatoes, manuring it well with stable-manure or guano, the latter of which he prefers.—*Am. Agricult.*

POINTS OF A GOOD MULE-BEARING MARE.—The district round Poitiers in France has long been celebrated for Mules. It appears that twelve millions francs are annually realized by the export of these animals to Spain, Italy, and the central and southern parts of France. The Poiterin farmers, consider a mare with the following points, especially desirable for mule bearing: A short body, long ribs, wide haunches, wide and low hocks, fleshy thighs, wide hoofs, heels well turned out and hairy; in short, a thick-set animal of capacious body is the right mould for a fine mule. Will some of our experienced mule breeders inform us how this agrees with their observation?—*Country Gent.*

THE CHINCH-BUG AND THE CORN CROP.—From all we can gather, the Chinch Bug is more numerous the present year than it has been since 1822-'23, and the cry of its desolation comes up from all parts of the country.—*Frid. Herald*.

THE MISSION OF A LITTLE CHILD IN THE HOUSEHOLD.—It is there like a gleam of sunshine and a voice of perpetual gladness. It is there with its bright and innocent face and prattle to diffuse an air of cheerfulness around the home circle. It is there as the well spring of pleasure. The very presence of such a thing of beauty and innocence unconsciously refines and spiritualizes our nature.—What varied and indefinable influences emanate from a little child in the midst of home! It is human nature fresh from the hands of God, like a flower opening in the dewy morning. Its pure affections, its artless friendship, its undissembled sincerity, its gushes of joy, its nameless touches of filial endearment, its burning caresses when its heart begins to open to the meaning of a mother's smile! Such a being, such a beautiful personification of heavenly innocence and purity in the household must be a source not only of pleasure, but of influences softening and purifying. When the father comes from the dusty and jostling scenes of business, filled with care, his spirit soiled by contact with sordid and selfish intrigue or by the policy and insincerity and dissembled friendships of the world, when he returns from such scenes to the sanctity of home, and meets there a little child with its sunny smile and lisping welcome, its artless sincerity and pure affection, he feels something of a child-like temper and spirit transferred into his own, something that soothes his fevered spirit and vexing cares, and re-attunes his heart to the gentler movement and harmony of the affections, and he feels himself a better and a happier man. We need just such an influence to counteract the coarser tendencies of the cares of life, and to soften the asperities engendered by attrition with the world, and to evolve the gentle feelings and sympathies of the heart, and to keep them fresh and youthful.—*Dr. Stork.*

USE COPPERAS.—The papers are everywhere urging the free use of copperas as a disinfecting agent. It is a cheap article, costing only three cents per pound, and can be found at the druggists, and many of the larger grocery stores. A couple of pounds may be dissolved in ten quarts of hot water, and the solution poured into sinks, gutters, cess-pools and all other filthy places with good effect. We advise all house-keepers to purchase five, ten or fifteen pounds, and make a free use of it as above recommended. Cholera or no cholera, their dwellings and out-buildings will contain a purer atmosphere after the use of copperas.

A cord of wood, 128 solid feet, usually put up 8 feet long, 4 feet wide, and 4 high. In France, a cord of wood is 576 feet.

THE SCIENTIFIC AMERICAN.

ELEVENTH YEAR.

SPLENDID ENGRAVINGS AND PRIZES.

THE ELEVENTH Annual Volume of this useful publication commences on the 17th day of September next.

The "*Scientific American*" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information, relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of Practical Science is calculated to advance.

Reports of *U. S. Patents* granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

The Contributors to the *Scientific American* are among the most Eminent Scientific and practical men of the times. The Editorial Department is universally acknowledged to be conducted with GREAT ABILITY, and to be distinguished, not only for the excellence and truthfulness of its discussions, but for the fearlessness with which error is combatted and false theories are exploded.

Mechanics, Inventors, Engineers, Chemists, Manufacturers, Agriculturists, and people of every profession in life, will find the *Scientific American* to be of great value in their respective callings. Its counsels and suggestions will save them Hundreds of Dollars annually, besides affording them a continual source of knowledge, the experience of which is beyond pecuniary estimate.

The *Scientific American* is published once a week every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with several hundred original engravings.

Specimen copies sent GRATIS.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8.

For further Club rates and for statement of the fourteen large CASH PRIZES, offered by the publishers, see *Scientific American*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to

MUNN & CO.,
128 Fulton Street, New York.

Messrs. MUNN & CO., have been, for many years, extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents. FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Ruleigh, March 26, 1855.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

FARMER'S HALL;

RALEIGH, N. C.



The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY,

PUBLISHER,

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS.

Of every description, including RECORDS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
M Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron and Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transporta-
tion.

SILAS BURNS & CO.

July, 1855.

4-tf

TABLE OF CONTENTS.

Agricultural Improvement,	174
Ages of Trees for bearing,	175
Beene Plants,	176
Bale of Cotton in Egypt,	181
Board Measure,	182
Baulky Horses, training of,	
Chickens, new way to cook,	189
Clovers and Grasses,	167
Cholera, Cure for,	176
Curculio,	179
Coffee, flavor of,	189
Compost, valuable,	289
Copperas, use of,	191
Child, Mission of,	191
Evergreens, transplanting,	181
Figs, how to dry,	189
Fair, State,	187
Fair at Henderson,	188
Flour, Tysor's,	179
Fodder, experiment in pulling,	182
Great yield,	173
Guano in abundance,	174
Gratitude,	175
Grasses and Grazing,	184
Horses, Raising,	183
Ice House, plan of,	174
Lucerne, culture of,	175
Malarious Diseases,	161
Mulberry, Drumgoole,	176
Ox, Henry Clay,	186
Oats, Winter,	183
Pears and Peaches,	188
Population, increase of,	186
Poor Farming, expensive,	180
Provision and Fruit Preservation,	189
Rowan Agricultural Society,	186
Rainy days,	180
Rheumatism, cure for,	189
Swamp Muck,	177
Sheep,	181
Turnip Fly, remedy,	181
Tamarind in Va.	182
Weight, &c.,	176
Wheat, soaking in Vitriol,	178
Weeds, why produced by land,	186
Wheat, probable price of,	188

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, OCTOBER, 1855.

NO. VII.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, in advance, or \$1,50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

From the Horticulturist. HEDGES.

THE importance of suitable enclosures for farms and gardens, as well as for ornament and screens, has long exercised the thoughts of cultivators, and the best has not yet ceased to be a problem that many are seeking to solve. In some sections of this immense country, it is a topic of the first consideration, and well deserving attention. The thorn in most portions of America has been abandoned on account of its diseases and the attacks of insects, and various efforts have been made to find a substitute. Good authorities have recommended from time to time the Osage Orange; this comes tolerably near to possessing all the requisites, but we regret to say it, not all.—Efforts are still making by various patriotic individuals, and at length our different sections and climates may find the desideratum. We shall endeavor to impart such information as is now possessed, and in doing this must acknowledge our indebtedness for examples of fine hedges to Mr. WM. REID, of Elizabethtown, New Jersey, who possesses within his remarkably well kept ner-

ries specimens of various descriptions, in the highest keeping and beauty.

An English writer says justly, "As to the beauty of a fine hedge, it is impossible for any one who has not seen it to form an idea; contrasted with a wooden, or even a brick fence, it is like the land of Canaan compared with the deserts of Arabia." The delay in bringing a hedge to perfection should not discourage the provident improver, for it is an everlasting fence, "at least," say DOWNING, "in any acceptance of the words known to our restless and changing countrymen. When once grown, the small trouble of annual trimming costs not a whit more than the average expenses of repairs on a wooden fence, while its freshness and verdure are renewed with every vernal return of the flower and the leaf."

As the hedge grows up, repeated cuttings are necessary, so that a wide bottom may be gained, without which none can be considered either useful or ornamental; for if broad at the top it retains water and snow to the great injury of the plants. Proper management will remedy most of the evils attendant upon the operation; but in America, with its costly labor and the rush of work at trimming time, farmers are still to be found who will twice or thrice a year go over the long hedges with proper care and precaution, to procure a permanent and elegant enclosure. Wood for fences is becoming very scarce, and there are prairie lands where no timber can be had for the post and rail or the worm fence, and sections where the land yields no stone for walls; and

where ornament is to be considered, hedges are essential.

THE OSAGE ORANGE (*Maclura aurantiaca*).—This plant has some very good qualities for the purpose, but it requires great attention—more, it has often been found, than the generality of busy farmers can afford to give to it; if neglected, it runs wild, loses and lowers branches, which at best must be interlaced after the first cuttings, or they will admit the smaller animals. Another disadvantage is that it is “a greedy feeder,” extends its roots far and wide, and exhausts the crop of its proper food to some distance in the field; the roots are also of an extraordinary size, frequently as large and thick as the wood above ground. It is, however, hardy, and if it loses the tips of the young shoots in a severe winter, it soon fills up with proper cutting. This plant is seldom liable to the complaint of sending up suckers. Where there is a determination to have it as a hedge, and to give it the proper yearly attention, it may do very well; but it is open to some objections, and it is late in coming forward in the spring and early in shedding its leaves. Our own opinion is, that in a vast portion of cases the Osage Orange, without great attention, will prove a disappointment; we express this with regret, for it has been extensively introduced. The experience of our friends at the west may be different.

THE BUCKTHORN (*Rhamnus catharticus*) is a strong, quick-growing plant, and makes a good, close hedge; it is very hardy, and when properly cut looks extremely well. Botanists agree that it is a native of America, even as far north as Massachusetts, as well as of the north of Europe and Asia. Its bark and leaf are offensive to insects, and the borer, which has ruined nearly all the thorn hedges in this country, will not touch it. It will grow in the shade, and in almost every description of soil. It is easily grown and transplanted, of long life, has a thicket-like habit, has few diseases, and bears shearing into any shape. Its berries, the pulp mashed in a box with a tight wooden pounder, sifted in water two or three times and then dried, are ready for planting. Dig good garden soil, and give it a dressing of manure, and plant them as you do peas or beans, placing the seeds two or three inches apart. They should be covered about an inch and a half deep, and if the rows are three feet apart the horse cultivator may be used to keep the ground in order. One year's growth in strong land, or two in inferior, will make a growth that will give you plants fit for transplanting into hedge rows. Two seasons of shear-

ing will develop its thorns, and commence to reward your labors.

The Buckthorn has been pronounced by those who have tried it, of very great utility and beauty, and it certainly comes as near to our wants as any plant which has yet been introduced. In the Essex (Mass.) Agricultural Society's Transactions of 1842, a correspondent says: “I do not hesitate to pronounce the Buckthorn the most suitable plant for hedges I have ever met with. It vegetates early in the spring, and retains its verdure late in autumn. Being a native plant it is never injured by the most intense cold, and its vitality is so great that the young plants may be kept out of the ground, or transported to a great distance without injury. It never sends up any suckers, nor is disfigured by any dead wood, needs no interlacing, and is never enanked by unskilful clipping.” The desideratum for a good defensive, and at the same time, highly ornamental hedge, would seem to be solved in the Buckthorn and Honey Locust. The seeds are collected and sold by the Shakers, and could probably be procured through the agency of any seedsman. Its bark and berries are powerful cathartics. Mixed with alum the sap of the berries makes the color known to painters as sap green, and the bark yields a fine yellow dye.

PRIVET (*Ligustrum vulgare*).—Mr. Reid's Privet hedges are the best we have seen; he has planted them extensively near his house, where they grow freely and make a truly beautiful spring, summer and fall hedge, leafing very early and retaining the foliage until the end of the year, being in fact almost evergreen, and truly a treasure.

THE HONEY LOCUST (*Gleditsia triacanthos*).—This plant Mr. Reid has always considered the best for farm hedges, and we are disposed to agree with him; after twenty years' trial, he is satisfied that it is more easily kept and better adapted for a farm fence than anything that has yet been used. When properly cut it looks as well as any deciduous hedge plant that is grown. When rapidity of growth and economy are both desirable, plant them six inches apart in the row, and let them grow four years without cutting; then crop them all to a height of five feet, which will produce a live fence of young trees; with one cutting every year, though two would be better, they will prove a protection for the life time of the owner. Planted four inches apart they might prove a perfect defence for a long time without the shears; but no hedge will long answer a good purpose of any kind without at least a careful annual cutting.—The Honey Locust we consider preferable to the

Osage Orange; in planting the seeds of each, care must be exercised to prevent the ravages of mice. Both may be sown where they are to grow permanently.

JAPAN QUINCE (*Pyrus Japonica*).—This beautiful plant grows very readily from cuttings, and forms a superb hedge. Mr. Reid exhibits about four hundred feet of it in the highest perfection, a portion of it well grown about four feet high; it forms not only one of the most beautiful flowering hedges, (there being very few hedge plants that flower when cut,) but it is also one of the most valuable and close defences of any plant yet tried. Interspersed with a few running roses, such as the Multiflora or Prairie, it will produce the most ornamental of screens. No one who has not seen it can properly estimate its great value.

Beech, Hornbeam, and Hawthorn hedges may also be seen at Mr. Reid's in a highly ornamental state, and each of these plants is deserving of attention. The French employ them, as well as the Elm with great effect.

ARBOR VITÆ (*Thuja occidentalis*).—For an evergreen ornamental hedge, the Arbor Vitæ is extremely valuable; for a screen to protect particular plants of a garden, a hot bed, &c., it has no rival; the American is the only one suitable for this latitude and further north. It makes a superb hedge, and is of rapid growth; purchased young, it is economical. It is offered every spring, from Maine, at one cent a plant for one year old seedlings, is easily removed from a distance, and, with the single slight objection of its getting somewhat brown in mid-winter; is among the most desirable for an American ornamental hedge. It will acquire great beauty even without any use of the shears, and is altogether less troublesome than anything we know. Other *Thujas*, especially the *Stricta* are also valuable.

THE HEMLOCK (*Pinus Canadensis*).—Of all ornamental plants for this climate, the Hemlock stands among the first in beauty, but like all the most beautiful things in this beautiful world, it is among the most expensive and tedious to procure. Growing it from seeds is perfectly practicable, but nurserymen have not yet turned their attention much to its culture. In neighborhoods where it is indigenous, the practice is to procure from its native spots one and two year old seedlings, taking great care to bring as much of the leaf-mould and earth with them as possible, and never to allow the exposed roots, if there should be such, to become dry. Plant (not too deep) at once, either in double or single rows; the latter is sufficient;—

shade and mulch with stones, and in three or four years, with occasional trimming in June and August, you will begin to be rewarded by the most exquisite tints of anything grown for this purpose. Great care must be exercised, as in all hedges, to give the proper tapering form to the mass. We can show in this neighborhood specimens of the Hemlock hedge that will defy criticism; unfortunately it is not a defence from cattle.

THE JUNIPER (*Juniperis communis*) treated as a hedge plant is highly ornamental, almost equal to the above, but is more transient and is apt to get too thick, and without much care to die out in places; this the Hemlock rarely does. The Juniper is only adapted to the Middle States. As a single coned shrub, well cared for, opened every year, and cleaned of its fallen leaves which collect in its centre, it deserves a place in every garden.

THE YEWS.—The English and Irish Yews would undoubtedly make fine hedges in our climate.—Mr. Reid has commenced his experiments with these, and sees no reason why they should not succeed as well here as in Europe; in very severe winters they become a little brown, but when placed in hedges they will stand the severity of winter better than as single plants. These like the Juniper would be only for ornament.

THE NORWAY SPRUCE (*Abies excelsa*) makes a rapid hedgerow, and where shelter from winds is required, we know of no plant better suited for that purpose, especially in northern latitudes. It will take much space if allowed to attain its full beauty and height; if a low screen be wanted, the leader may be annually stopped, and the side branches trimmed back the entire last year's growth; this makes a heavy, thick, blackish-green fence of great importance where high winds are offensive or injurious.

THE DEODORA will probably make a handsome hedge plant, but has not yet been sufficiently long in use, and is still too expensive.

RED AND WHITE CEDAR.—These look well for a time, but in a few years drop their lower leaves and become unsightly.

We now come to our own favorite, and our proposed

PREMIUM.

THE HOLLY (*Ilex opaca*).—Among the neglected evergreens of our country, the American Holly stands conspicuous, both for its beauty at all seasons, its patience of the shears, and the red berry, valuable as it is for the eye, and acceptable to the winter birds. It is somewhat difficult to propagate from seed, at least to the uninitiated,

but a little observation of its habit would overcome this. From two bushels of seed, which we planted some years ago, but seventy-five plants were procured, though a variety of situations, in doors, and in frames, and out, were tried. These few came up in a Black Hamburg Grape vine border, *in rows* under the drip of the glass, giving a hint as to their wants. These plants were formed into a short hedge, which already gives evidence of its value and beauty, and will undoubtedly be a protective defence. The English Holly, most probably, would be hardy in a hedge. However that may prove, the Horticulturist hereby offers a premium of Fifty Dollars for the first perfect Holly hedge of the American variety, not less than one hundred feet in length, and four in height, that shall be exhibited; the plants to be raised from seeds of this year's growth.

TRIMMING.—All the hedges we have named above should be trimmed twice every year to produce the finest results, viz: in June and the middle of August; with the exception of the Osage Orange, which may be left till the middle of September. The last trimming is not only beneficial to their future growth, but it greatly improves their appearance, as they are not likely to push after that period; if not cut at this season they are loose, and have an unsightly appearance through the fall months. The trimmer before he uses his garden shears sets, with a crowbar, two poles, one at each end of the hedge, so that the tops are a little above the top of the plants; he then stretches a line from pole to pole as near the centre as possible, and settles it to a level. This gives the centre of the hedge, and is a good guide. The sides are then cut without other guide than the eye; the best form is that imitating the shape of a sharp gothic window. A hedge of this form ought never to be wider at the bottom than thirty-three inches to three feet; the pointed top will prevent snow from lodging. A pair of large hedge shears is usually employed by the trimmer, but a practiced hand will do it equally well and more rapidly with a *hook* made like a sickle, but with a sharp edge. We employ it advantageously to trim the Juniper into a cone after it is tied up. By a little practice an apparently large job is soon finished.

Hedges are important both as useful and ornamental objects; in the latter department they are too much neglected, as well before as after planting. We shall be contented if we have stimulated a few of those who have seen them in perfection to go and do likewise.

For garden hedges there are many plants that

suggest themselves for use. The Honeysuckles, particularly the Chinese evergreen may be thus trained to great elegance; the Evergreen Euonymus, or Strawberry tree, the Tree Box, the Althea frutex, Syringa and Lilae, the Snowball, and the Deutzia, the Yucca, especially at the South, Savin the Phillyreas, with various others, may be adopted on a small scale to great advantage. The Pyracantha, with its beautiful berries, should also not be forgotten, and the small golden Willow makes a neat little hedge, looking remarkably well even when the foliage is gone.

From the Working Farmer.

SUB-SOIL PLOWING.

OUR readers are well aware that we have advocated sub-soil plowing from the commencement of our journal—and even before the implement known as the sub-soil plow had been improved, we advocated its use, notwithstanding the necessity of double teams, etc. But now, when by the use of the lifting sub-soil plow, we can disturb the sub-soil with a team even less in force than that required for deep surface-plowing, it is the more necessary to advocate its use. This sub-soil plow should follow the surface plow, propelled by a separate team, and disturbing the sub-soil to the depth of twelve inches below the bottom of the surface-plow furrow. In its travel through the soil, it lifts the whole mass above it two inches, permitting the soil to fall back in its place in the rear, thus leaving it relatively to the surface-soil in its original position and not mixed with or elevated through the surface-soil. During this slight lifting, the furrow-slice previously thrown over is moved, as is the earth above a mole in his track, thus separating slightly, and softening each furrow-slice, admitting the atmosphere to all its parts, and leaving it tractable to the harrow or even the roller.

The mechanical action of the sub-soil plow does not cease here, for it undercuts the standing or land-side soil, at the same time slightly lifting it and breaking up its adhesive property, so that the next furrow surface-slice not only cracks down to the sub-soil cut, but turns, as in mellow soil, instead of adhering together in a continuous rolled furrow. The action of these two plows combined, then, produces results on soil which cannot be achieved without such combination of plows, and this new condition may be thus understood: The object of plowing, or condition to be attained, should be to separate the particles *relatively* to each other for the shortest possible distance, and the removal or turning of masses through long distances.

as in deep surface-plowing alone, does not insure the thorough disintegration of particles from each other, as does this combined action; for the lifting of soil for ever so short a distance, by an instrument, the upper surface of which is highest in the centre, as with the sole of the lifting sub-soil plow, causes every particle to be separated from its fellow, and thus to be left in a finely divided condition—like the soil in a mole track—instead of being in masses like the furrow-slice in damp soil.

The movement of a furrow-slice through the arc of a circle of two feet or more in diameter, or even the carrying this slice a *mile* and bringing it back to its original locality, would not render it pulverulent, as does this motion of the lifting sub-soil plow beneath it; for, during the travel of this plow we may observe the surface giving the same indications of motion, as if an immense serpent were moving beneath it.

This effect is particularly noticeable when the sub-soil plow is run by itself, without surface-plowing through a sward-bound meadow; for if this be repeated at distances of four feet between the cuts, the whole surface of the field will be elevated an inch or more, and a walking-cane may be pushed through the sod to a depth averaging two-thirds of that to which the plow has been run; for the slight lifting of the whole mass of soil above the plow having an upward and outward action, causes all the particles to be loosened from each other, while the looser particles of earth falling from the lower side of the elevated mass into the plow track below, renders this elevation permanent in degree, until by frequent rain and the effect of time, it shall again settle back to its original condition.

By such treatment, the soil is loosened around every root, giving new vigor to the live portions, and permitting the inert or dead part to decay and fertilize the whole, and in this way an old meadow may be restored, without reversing or breaking up the surface sod; for, although a cut occurs in front of the lifting plow, it closes again immediately behind it, merely leaving such division as will permit the entrance of air and moisture into the soil.—So much, then, for the mechanical action of the lifting sub-soil plow as compared with other implements.

When used in connection with the surface-plow, the advantages as compared with the old system, are as follows:—First, it enables the farmer to plow shallow, or reverse the immediate surface to such a depth as the richer portions of his soil may indicate. Second, it enables him to disturb his soil to any required depth, without elevating the sub-soil

or mixing it with the surface, and the consequence is, that by the combined effects of air and moisture, his sub-soil is changed in character so as to resemble that of the surface-soil, and permitting an increase of depth in his future surface-plowing.

It is true, that in some soils the rapid elevation and admixture of the sub-soil is judicious, for it often contains integrants required in the surface-soil; but it is also true, that in some soils this elevation should be gradual, permitting the disturbed sub-soil to advantage by the effects of time before its final elevation.

As to the general advantages arising from deep and thorough plowing in the manner indicated above, they may be summed up as follows:—Poor sub-soils are rendered capable of sustaining vegetation by the chemical changes which occur from the admission of atmosphere among their particles. It admits the gradual deepening of all surface-plowing; clay sub-soil and hard pan sub-soil, by being aerated, are rendered kind and workable;—excess of water is often suffered, by such cutting of the sub-soil, to pass down to a freer stratum, always leaving behind those matters held in solution which are readily absorbed by the alumina and carbon of a well divided and properly aerated soil: the travel of the roots of plants is increased, and thus they come in contact with a great number of particles, and can appropriate a greater variety and larger quantity of food, while the decay of these roots in the sub-soil, soon supplies it with carbonaceous matter, and with all those inorganic constituents the roots may contain, in a more progressed condition than when first absorbed from the sub-soil. Less manure will produce equal results on sub-soiled lands, while the free admission of atmosphere over an increased amount of surface, causes the receipt and absorption of large amounts of carbonic acid and ammonia, and even the dews and rains which absorb these gases from the atmosphere and descend with them to the soil, are more thoroughly robbed of them during their downward travel, and are held at such a distance from the immediate surface as not to be carried off by the action of the sun and winds the next day. But the greatest advantage derived from sub-soil plowing, is the entire security from drouth; for, whenever the soil is deficient in moisture, it must necessarily exist in the atmosphere, as it is never put out of existence: and when this atmosphere can circulate to such a depth as to come in contact with particles of soil colder than itself, it will deposit its moisture, and thus supply the necessary conditions for continued growth. The

drops of water on the outside of every cold pitcher, prove this fact—and the reports of the American Institute on the condition of our farm during the drouths of 1848 and 1854, prove that deeply disintegrated soils cannot suffer from drouth.

Sub-soil meadows *never run out*, and thin sowing of grain is *alone practicable in deeply disintegrated soils*, for no tiller root can form after any one root of a stool comes in contact with a cold and undisturbed sub-soil. Thus, a pasture field, previously sub-soiled, may renew the broken crowns of plants by tillering, while one not so prepared, will lose the stools as rapidly as abraded by the feet of cattle. It should be remembered, however, that lands *requiring under-draining* to get rid of excess of moisture, must be so treated before the use of a sub-soil plow, or the recurrence of rains will soon settle the submerged portions back to their original conditions.

AGRICULTURAL DIVISION OF PATENT OFFICE.

The Carob Tree, or St. John's Bread.—Of all the seeds imported by this office for the purpose of distribution, there is not one more interesting or more valuable than those of the Carob Tree. The pods, when matured, contain a few drops of a substance resembling honey. The tree is unquestionably of Eastern origin, and it is supposed to be identical with that upon which St. John fed while in the wilderness. The seeds were procured for the office from Alicante, in Spain. In Murcia, Valencia, Catalonia, and other provinces in that country, it abounds, and frequently forms, with the olive and other valuable trees, large forests. It was, without doubt, introduced there by the Moors, who knew its nutritive qualities as a food for their horses, mules, and cattle. They probably brought it from Palestine and Egypt, whence it appears to have originated. In these Spanish provinces it now grows naturally in every kind of ground, not excepting the driest and most barren spots, where the underlying rock shows itself more frequently than earth. Its roots, twisting in every direction, accommodate themselves to the lightness or depth of the soil; while the trunk, remarkable for its smooth and light-colored bark, attains in sheltered positions a colossal size. The branches, furnished with greyish colored leaves, spread majestically around the trunk, and, when loaded with fruit, hang down quite to the ground in the form of a tent. The fruit ripens rapidly, and such is its abundance and weight that it is necessary at once

to gather it. The pods are sweet and rich in sugar, and animals feed on them with avidity, and become quite fat and in good condition for work. There are several varieties of the tree. The produce is necessarily in proportion to the attention given.—It blooms twice a year—about the first of February and the middle of September—and when well watered arrives at a considerable height, and sometimes covers a space of one hundred feet in diameter, bearing upwards of a ton of pods. It will doubtless succeed in the southern and perhaps in the Middle States.

National Intelligencer, 10th June 1855.

Insects Injurious and Beneficial to Vegetation.—

One of the most important movements that has been made in this branch of the office is that of employing a gentleman to investigate the habits of insects injurious and beneficial to crops. The vast amount of benefit that must arise from such an inquiry is hardly perhaps appreciated by the great majority of persons; and yet it cannot fail to be the means of spreading most useful information among cultivators, and of adding to the productiveness of the soil and the wealth of the country, by originating precautions and suggesting ideas for the more effectual protection of the productions of the fields and gardens from attacks of insects. The information we at present possess about them is so limited, and the methods suggested for destroying them so varied and ill-digested, that any step towards a more exact study of their habits cannot be too highly estimated. The gentleman chosen by Judge Mason, Commissioner of Patents, for this investigation is Mr. Townsend Glover, already sufficiently well known as an artist and naturalist of promising talents. He has been directing his attention to the subject with a devotion and enthusiasm which spring from a conviction of the importance of the task imposed upon him and a confidence of success. While studying the habits of insects he illustrates them; giving at the same time such remedies for their destruction or diminution as may be ascertained to be most effectual.

Mr. Glover is now turning his attention more especially to the insects pernicious and beneficial to rice, tobacco, the sugar cane, cotton, and the orange plant, and for that purpose left this city some days ago for Florida, in which State he expects to have such opportunities and facilities as his investigations demand. He has been also directed to discover, if possible, the cause of the *white rot* in the live oak, and to ascertain the most

probable remedy. During the past year he was engaged in watching the operations of the rice and cotton insects in the Carolinas, Georgia, and Alabama, as also those of the corn and grain insects of the Middle and Northern States, while he continued to direct his attention at every fitting occasion to those insects which attack vines and fruit trees. To point out to the farmer the insects beneficial to him is in some measure to insure their protection from wanton destruction, and have their natural co-operation in aiding to secure from injury the fruits of human industry.

In the next annual report, now printing, will be found engravings prepared on stone by Mr. Glover of many of these insects. They will be carefully studied by all persons interested in agriculture; and, as the subject is one of no common interest, benefitting as it must do every portion of the Union, the efforts of Mr. Glover will be duly estimated by every agriculturist and obtain for him their hearty co-operation.—*Nat. Int.*, 13th June.

The Mangosteen.—In consequence of some recent experiments in England with the Mangosteen, (*Garcinia mangostana*), it is intended to introduce this delicious fruit into the United States, in the southern portions of which it is hoped that it will grow and produce abundantly. It is a native of the Malay Archipelago, and is esteemed by those who have had opportunities of testing it as the finest, the most delicate, the most fragrant, and at the same time the most healthful of fruits. If half only of what has been said of it be true, a greater acquisition to our gardens could not be wished for, and no effort should be spared to obtain and distribute it for cultivation in all available localities. Rumphius, a Governor of one of the Dutch possessions in the Eastern Archipelago, thus speaks of the Mangosteen:

"When ripe the fruit is as delicate and agreeably sweet as the finest lausches, (another famous Malay fruit,) and may even be mistaken for ripe grapes. It is at the same time so juicy that many people can never get enough of it, so delicious is its fragrance and agreeable its sweetness; and it is believed that the sick, when appetite or the power of eating has wholly gone, are nevertheless delighted with this fruit; or at least if they will not take to Mangosteens their case is indeed hopeless."

Another writer says:

"It is not surprising that those who have had no opportunity of tasting this delicious fruit should be incredulous as to its excellence. It is difficult indeed to speak of it without the appearance of ex-

aggeration. Nevertheless it will be found that the statements of every traveller who has written about the Malay Islands assign to it the highest place at the dessert; and, so far as our own taste can be trusted, we wholly concur in that opinion."

Public attention has just been drawn to the Mangosteen in England, by the circumstance that, after remarkably skilful management, the perfect fruit has been produced at the country residence of the Duke of Northumberland, at Syon, near London; and the Horticultural Society so highly appreciated the success that, in departure from the usual custom, it granted the gold Banksian medal in testimony of their opinion of its importance.—Some twenty-two years have been occupied in experiments to arrive at a successful issue; and it has been ascertained that the conditions necessary to the plant in a domesticated state are an abundance of warmth, moisture, light, and, above all, *fresh air*, skilfully and constantly admitted. To obtain the latter result in the climate of England, without losing the first requisites, was one of the difficulties to be overcome. The fruit so raised was quite matured and perfectly organized. It possesses the valuable property of keeping well and travelling well.

The Mangosteen has been named "*Garcinia*," in honor of Dr. Laurent Garcin, who travelled in the East Indies, and first brought it into notice.—*Mangostens* is the Malayan name. The tree rises with a taper stem, sending out many branches, not unlike a fir-tree, with oval leaves, seven or eight inches long. The flower is like that of a single rose; the fruit round, the size of a middling orange; the rind is like that of the pomegranate; the inside of a rose color, divided by thin partitions, as in oranges, in which the seeds are lodged, surrounded by a soft juicy pulp of a delicious flavor, partaking of the strawberry and the grape, and is esteemed one of the richest fruits in the world. It is a native of the Molucca Islands, whence it has been transplanted to Java and Malacca. The head of the tree is in the form of a parabola, so fine and regular and the leaves so beautiful that it is looked upon in Batavia as the tree most proper for adorning a garden and affording an agreeable shade: According to Dr. Garcin, "it is esteemed the most delicious of the East India fruits, and a great deal may be eaten without any inconvenience. It is the only fruit which sick people are allowed to eat without scruple. It is given with safety in almost every disorder; and we are told that Dr. Solander, in the last stage of a putrid fever in Batavia, found him-

self insensibly recovering by sucking this delicious and refreshing fruit. The pulp has a most happy mixture of the tart and sweet, and is no less salutary than pleasant. It is propagated by ripe cuttings in sand in moist heat."—*National Intelligencer*.

The Pistachio Nut.—This is an extremely interesting tree, not merely on account of its ornamental character, but because it is useful and produces agreeable nuts. For the twofold reason a quantity of them has been imported from the southern part of Europe and widely distributed throughout the middle and southern sections of the Union.—In favorable situations it will attain a height of fifteen feet or twenty feet, and frequently, while yet a mere shrub of five or six years' standing, will bear. Its branches spread out widely without being numerous, and the trunk is covered with a grayish-colored bark. The inflorescence takes place about April or May. The male flowers, which appear first, shoot from the side of the branches in loose panicles, and are of a greenish tint. The female flowers put forth in clusters in the same manner. As the Pistachio tree is dioecious, it is necessary to plant male and female trees together, or they will not produce. The nuts are of an oval form, about the size of an olive, slightly furrowed, and of a reddish color, containing an oily kernel of a mild and agreeable flavor. This tree is a native of Persia, Syria, Arabia, and Barbary, and is supposed to have been introduced into Italy in the second century by the Emperor Vitellius; whence it was carried into France, in the southern parts of which it is so far naturalized as really to appear indigenous. Later still, that is in 1770, it was introduced into England, where, in sheltered positions, it bears without protection from the cold of ordinary winters. The summers there are scarcely warm enough to ripen its nuts. Although severe frost is to be dreaded, it will bear a greater degree of cold than either the olive or the almond, and hence is better adapted to the climate of our Middle States, where it is thought it could be cultivated with profit. The finest kinds are those known as the Aleppo and Tunis varieties—the former for its large size, the latter, though smaller, for qualities which recommend it to French confectioners, who cover the fruit with sugar and chocolate and flavor creams and ices with it. The Sicilian Pistachio nut is used in France in the preparation of sausages and in seasoning meats. It is considered as a tonic and as beneficial for coughs and colds. It is frequently eaten raw,

but oftener in a dried state, like almonds.—*National Intelligencer*.

The Cork Tree.—About a hogshead of acorns of the cork oak was ordered from the south of Europe for distribution in the Middle and Southern States for experiment, or to test their adaptation to soil and climate. Much is anticipated from their successful introduction. Should a portion of the present distribution by any untoward circumstances fail to answer expectation, care will be taken by the office to obtain another supply for those who feel an interest in growing this useful tree.—It will be a subject of national importance if the introduction prove successful. Plantations should be established on every favorable locality, so that in due time the increasing wants of the country may be fully met by the home supply. The tree grows rapidly and attains a height of upwards of thirty feet. Indeed, even in England, there are various specimens over fifty feet high, with a diameter of more than three feet. Cork trees are much esteemed in Southern Europe, and land planted with them is considered the most profitable of all that is unirrigated. They seem in general to prefer those localities where gneiss, sandstone, schistose, and calcareous rocks abound. The substance so familiarly known to us as "cork" is the epidermis or outer bark, which sometimes attains a thickness of two or three inches. This is rarely taken off until the tree has arrived at an age of fifteen or twenty years. This operation, which is carried on every six, seven, eight, or nine years, according to circumstances, is generally completed in the months of May and June, while the sap is still active in the tree. Although easy to accomplish, some care is required to avoid injuring the real bark, the "liber," which lies under the cork. A circular incision is usually made around the foot of the tree and another near the branches. Longitudinal cuts are then made; and finally, by using the handle of a hatchet as a wedge, the cork is detached from the under bark. The larger branches are treated in a similar manner.

National Intelligencer.

Insects Injurious and Beneficial to Vegetation.—Mr. MASON, Commissioner of Patents, has had employed Mr. Townsend Glover, an artist and naturalist of distinction, for the purpose of investigating the habits of the insects injurious and beneficial to crops, and illustrating the same with the view of describing them, with the remedies for their diminution or destruction, and all other in-

formation on the subject, in the agricultural reports. He has recently left for Florida, where he will pass several months studying the insects pernicious or beneficial to rice, tobacco, sugar-cane, orange, and the cotton plant, and also to discover the cause and remedy, if practicable, of the white rot in the live oak. Mr Glover has been engaged during the year past in watching the operations of the rice and cotton insects in the Carolinas, Georgia, and Alabama, the corn and grain insects of the Middle and Northern States, and the insects attacking vines and fruit trees in general, as well as numerous insects beneficial to the farmer.—Many of the insects referred to he has engraved on stone, which are now in progress of printing, and will illustrate the next agricultural report.—As this subject is one of unusual interest, and will tend to the benefit of all sections of the Union, we trust the indefatigable efforts of this gentleman will receive the hearty co-operation of the agriculturist throughout the country, and his labors be crowned with success.—*Union.*

THE following from *The Working Farmer* shows some of the good effects of Farmer's Clubs. We hope their importance and ability will be seen and felt all over the State, and that ere long, there will be more than one Agricultural Society in every county in North Carolina. Let all, however few in number, who feel an interest in the cause of improvement, hasten to get up societies in their respective counties, and see that they meet regularly. Perseverance on their part, will gain them friends and their numbers will increase, and much good will result:

NEW YORK FARMER'S CLUB.

No adjunct of the American Institute has been of greater public service than the *Farmer's Club*, and many of our readers may be surprised to learn that the number of attendants during the last six months has averaged larger than the number attending the weekly meeting of the Royal Agricultural Society of England. We acknowledge this is not saying much for numbers, but it is surpassing a standard institution of the same kind. The Club has now been established nearly twenty years, and each season has been the organ for the distribution of large quantities of seed, scions, grafts, etc. Indeed, millions of grafts have been distributed by this Club, and the improved fruits now to be found in the New York market, have been raised, to a very great extent, from these grafts collated and sent forth from the Club.

Its meetings are conducted on the conversational plan, and of late have been free from debate, and, thus, instead of the time of the members being occupied with listening to the disputes of the orators contradicting each other, they have heard all the facts proffered by speakers, without useless loss of time, and it is not difficult for each auditor to discriminate between the wild dreamings of a sanguine reader who desires to be in the country, from those of a practical observer of nature's laws, assisted by such an amount of theory as renders him capable of selecting truth from error.

All new tools are sought after by the managers of the Institute, and placed before the Club at their meetings, where both their inventors and those who have used them, may describe their merits, requirements, etc.

The Club is free to all who choose to attend, and the expenses being paid by the Institute, and no charge being paid for admission, or for grafts or seeds.

All who choose propose subjects for future discussion, and these are taken up in turn, the proposer having the first right to speak to his subject if he desires.

At a later date the Institute has established a Mechanical Club, the meetings of which are attended by all the engineers resident in, or at the time visiting New York, and we know of no institution where such information can be collated in so short a time, as at these clubs.

The only difficulty is to publish exact reports; for if entire, they are too long for any of the daily papers, and when abridged by reporters not specially interested in the subject under discussion, errors frequently occur not dreamed of by those who are reported to have uttered them.

The Secretary, Judge Meigs, devotes his time, like a true philanthropist, to advancing the best interests of the Club, and few are so well calculated to produce so desirable a result.

THE FAITHFUL WIFE.—A true and beautiful tribute to women, by D. Webster: May it please your honors, there is nothing upon this earth that can compare with the faithful attachment of a wife: no creature who for the object of her love is so indomitable, so persevering, so ready to suffer and to die. Under the most depressing circumstances, woman's weakness becomes mighty power, her timidity becomes fearless courage, all her shrinking and sinking passes away, and her spirit acquires the firmness of marble—adamantine firmness—when circumstances drive her to put forth all her energies under the inspiration of her affections.

DEEP PLOWING—ITS GOOD EFFECTS.

THE following is from the *Ohio Farmer*. While we accord fully with most of the doctrines contained in the article below, we would suggest that the writer might add to the rationale of capillary attraction supplying moisture in deeply plowed lands during drouth, the fact that moisture is deposited on the particles of soil, by being condensed from the atmosphere circulating among them, and the instance we have so often quoted of drops of water always accumulating on the outside of a cold pitcher condensed from the atmosphere, is a sufficient proof of this fact. It is well known that deeply and thoroughly sub-soiled land never suffers from drouth, and we think the moisture is received by condensation from the atmosphere in the way we have named above.

It is certainly true that the frequent stirring of the surface, even during the most severe drouth, protects plants from its effects, and it is also true that upon examining a soil when sufficiently loose to admit atmosphere, that its particles will be found moistened at any depth where its temperature is a few degrees less than that of the super-natant atmosphere.—*Working Farmer*.

We part with notions imbibed in our youth and practiced upon for a series of years, very reluctantly. Hence it is, that many well meaning farmers, view this subject of deep plowing, with some degree of suspicion. They have found, that for a series of years, four inch plowing has regularly produced crops of wheat, corn, and oats, and some farmers have even persuaded themselves, that the best meadows and pastures are produced by sowing upon the unplowed earth:

But all these, and many other errors in the art of farming, are being rapidly dispelled, and we expect to live to see all the young, and middle-aged farmers, pursuing a very different system of practice from that which has been too generally pursued, especially in regard to plowing.

It will be observed that all those who give their experience in deep tillage, have but one story to tell, to-wit: that crops grown upon deep plowed land, *stand the drouth and the wet the best, and produce the largest yields*. The reasons for these advantages, are of the most simple kind, and should be conclusive in the mind of any farmer who knows that *warmth, moisture and nutriment*, are essential to the growth of vegetation.

These reasons are, as oft before repeated:

1. When an excess of water falls upon a crop, it is distributed through a greater extent of soil.

and settles away, *below* the body of the roots of plants, thereby avoiding the chilling and soaking, which plants are subject to, whose roots are immersed in water.

2. In a season of *drouth*, the water which has thus become stored away during an excess of rain, is attracted upward by the heat of the atmosphere, and dryness of the surface-soil, thus coming in contact with the roots, furnishing moisture to the plant, and holding in solution the chemical constituents contained in the soil, upon which the growing crop depends for sustenance.

3. It is essential to a vigorous growth of vegetation, that the soil should become *warm*.

This takes place only through the medium of warm *air* circulating through the soil. The air cannot penetrate, except the soil be well stirred and rendered measurably light. The depth to which the soil will become warmed, will depend entirely upon the depth to which the plow is sunk. If the land is only disturbed four inches in depth, then only four inches of soil will be warmed. The compact soil below this, will hold its winter temperature to a late day in spring, constantly presenting a chilled surface to the roots of the young and tender crop. We hear of warm soils, but rarely consider that this very desirable property depends upon the fact, that the soil is naturally light and porous, readily admitting the warm air of early spring, even before plowing.

4. He that thoroughly tills his land twelve inches deep, renders available, twice the amount of nutritious matter that is developed by his neighbor, who plows but six inches deep.

The following facts, published in the Royal Journal of the English Agricultural Society, by Sir Edmund J. Tracy, should be carefully studied by every farmer:

"On my coming," he says "to reside on my estate, at Blackheath, about six years since, I found five hundred acres of heath land, composing two farms, (which had been enclosed under an act of Parliament about forty years,) without tenants, the gorse, heather, and fern, shooting up in all parts. In short, the land was in such a condition that the crops returned not even so much as the seed sown. The soil was a loamy soil, and had not been broken up beyond a depth of *four inches*, beneath which was a substratum, (provincially called an iron pan,) so hard, that it was with difficulty broken up with a pick, and my bailiff, who had looked after the lands for thirty-five years, declared they were not worth tilling, that all the

neighboring farmers said the same thing, and that there was but one thing to be done, viz: to plant with fir and forest trees. But to this, I paid but little attention, as I had the year previous, allotted some parcels of ground taken out of the adjoining lands, to some cottages, to each cottage about one third of an acre. The crops on these parcels looked fine, healthy and good, producing excellent wheat, carrots, cabbages, potatoes, and other vegetables in abundance. The question then was, how was this done? On the outside of the cottage lots, all was barren. It could not be from manure, for the cottagers had none, but what they scraped up in the roads. The fact was the whole magic lay in the *spade*; by which the land was broken up eighteen inches deep. As to digging up five hundred acres in this way, at a heavy loss, I could not attempt it. I accordingly considered that a plow might be constructed, that would loosen the soil to a depth of eighteen inches, (keeping the best soil at the top,) thus admitting the air and moisture to the roots of the plants, and enabling them to extend their spangioles in search of food, for air, moisture, and extent of pasture, are as necessary to the thriving and increase of vegetables, as of animals.

"In this attempt I succeeded, as the result will show. I have now broken up all these five hundred acres, eighteen inches deep. The sub-soil plow followed in the furrow after the other, and the substratum was so hard, that the horses were frequently set fast, requiring the use of the pick to loosen the soil, that they might proceed. After the first year, the land produced double the former crops, carrots growing to a length of sixteen inches, and of proportionate diameter. This amendment could have arisen solely from the deep plowing, as of manure I had scarcely any. The plow tore up the roots of the gorse, heather, and fern, so that the land lost all the character of the heath-land, the first year after the deep plowing, which it had before retained, notwithstanding the plowing in the usual way for 35 years. Immediately after this sub-soil plowing, the crop of wheat was strong, and long in the straw, and the berry plump and heavy, weighing full sixty-four pounds to the bushel.

"The millers were desirous of purchasing it, and could scarcely believe that it was grown upon the heath-land, as in former years, my bailiff could with difficulty get a miller to look at his sample. Let it be borne in mind, that this land had had no manure for years, was *run out*, and could only have been restored by the deep plowing."

VEGETABLE CHEMISTRY.

We find an article in one of our exchanges, headed "Vegetable Chemistry," and after giving much good argument in favor of the analysis of soils, it proceeds with the following:—

"This inorganic matter is drawn from the earth, as oxygen, hydrogen and carbon are from the atmosphere, by a chemical process, and they must exist in the soil, or the plants cannot grow. If, then, a particular plant 'runs out,' or the earth ceases to produce it, it shows that the constituent elements of that plant are exhausted, and crops, possessing different inorganic elements, should be cultivated. Thus, if sorrel runs out, it shows that the sulphuric acid in the soil is exhausted, and to again produce it, iron must be added; if it will not produce wheat, it shows that the phosphoric acid is exhausted, and the soil needs lime, or bone dust; if it will not produce potatoes, the soil lacks potash, and needs leached ashes."

Such errors as the above are certainly calculated to bring scientific agriculture into disrepute, and writers who are not familiar with scientific truths, are guilty of a moral wrong when they publish such nonsense as the above. The writer says, "If sorrel runs out, it shows that the sulphuric acid in the soil is exhausted, and to again produce it, iron must be added." Now by what means does he anticipate producing sulphuric acid by the application of iron? Again he says, "If it will not produce wheat, it shows that the phosphoric acid is exhausted, and that the soil needs lime or bone dust." Now it is true that bone dust will replace the phosphoric acid, but will he show us by what means lime is to add new quantities of phosphoric acid in the soil? Had he said phosphate of lime, he would have been right, provided the phosphate was in a soluble condition, or soon to be rendered so by chemical action, as with bone dust. He then says, "If it will not produce potatoes, the soil lacks potash, and needs leached ashes." Now if we understand what is meant by leached ashes, it means ashes from which the potash has been removed, and he therefore should have recommended *unleached*, and not leached ashes, to supply the deficiency. Such bungling errors as the above are hurtful to the cause of agricultural progression.—*Working Farmer*.

UNITED STATES AGRICULTURAL SOCIETY.—The next exhibition of this Society will be held at Boston, the citizens having subscribed \$10,000 to meet the expenses. It is proposed to make it a magnificent affair.—*Progressive Farmer*.

WASTE OF LIQUID MANURES.

THE proper construction and location of barn-yards is a subject entitled to most respectful consideration. If the question, "are liquids flowing from manure heaps valuable?" were seriously submitted to the farmers of this country, it would provoke a smile of derision, that any one of common sense would propound so simple a query. And yet, notwithstanding this perfect knowledge of the fact that this liquid is comprised of a large portion of the most valuable fertilizing ingredients of the manure heap from which it flows, how very few farmers appear to consider it worth their while to save it from utter waste. We have been led to these remarks from having had very frequent opportunities during the past two months of observing the reckless indifference manifested by very many farmers in the construction and location of their barn-yards. Indeed it appeared to us, that it had been the fixed design of the owners to afford the most complete escape for all the liquids from their barn-yards, they could not have accomplished it more effectually. It is almost impossible to conceive of a more complete disregard of true economy. The farmer who year after year witnesses the streams of rich liquid manure flowing from his barn yard to the nearest riveulet, to be lost to him forever; or running along the road side, rendering it unpleasant to the eyes and olfactories, has a poor right to complain if his crops are less abundant than his neighbors. Nor should it be a matter of surprise to him, if after having applied the same quantity of manure plowed as deeply, pulverized as thoroughly, and in every other respect given his crop the same attention, the yield should fall short of his who does not permit the washing rains to exhaust the most valuable portion of his manure heap.

It should be a cardinal principle with every farmer to economize his manures. Upon it depends his success, and without it, his labors must, to a very great extent, be without profit, if not attended with absolute loss. If it is found necessary to have the barn-yard on a hill side, it is equally necessary to have the lower side of it protected by a wall, or some other arrangement by which the escape of liquid manure may be prevented. It is almost equally important to have a spout to convey the rain water from the roof of the barn in some other direction than directly through the barn-yard. It is bad enough that the manure heap should be exposed to the rains which fall directly upon it, without adding to it the droppings from the roof of the barn. If such improvident farmers were to behold the actual value of the fertilizing material thus lost, rolling from their purses in the shape of dollars and cents, how energetically would they labor to prevent the

waste. The loss of a single little gold dollar would stir them up to greater activity than the direct waste of a hundred times that little gold dollar's value in the form of liquid manure. Year after year, silently but steadily, the golden streams are flowing from their purses. Tell them of their error, and they acknowledge it, but rarely does it happen that being reminded of it in a friendly manner, they make a single effort to correct it. How many are there, who after a life time of steady, unremitting toil, find themselves no richer in lands or money than when they began. They cannot explain the reason. Other causes may have led to such discouraging results, but if the drain of liquid manures from their barn-yards had been checked when they began farming, very many of these unsuccessful ones would have been as prosperous as their more provident neighbors.—*Progressive Farmer.*

STATE AGRICULTURAL SHOWS FOR 1855.

Name.	Where Held.	Date.
Georgia,	Atlanta,	Sept. 10—
Vermont,	Rutland,	" 11—13
Canada East,	Sherbrook,	" 11—15
Rhode Island,	Providence,	" 11—14
" " Horse and cattle, do		" 11—14
New Hampshire,		" 12—14
New Jersey,	Camden,	" 18—21
Ohio,	Columbus,	" 18—21
Pennsylvania,	Harrisburg,	" 25—28
West Virginia,	Wheeling,	" 26—28
Kentucky,	Paris,	" 25—28
Tennessee,	Nashville	Oct. 1—6
New York,	Elmira	" 2—5
Connecticut,	Hartford,	" 9—11
Illinois,	Chicago,	" 9—12
Canada West,	Coburg,	" 9—12
Union Fair,	Henderson, N. C.,	" 10—12
North Carolina,	Raleigh,	" 16—19
Indiana,	Indianapolis,	" 17—19
East Tennessee,	London,	" 23—25
Maryland,	Baltimore,	" 29—
Virginia,	Richmond,	" 30—

MICE GIRDLING TREES.—Many receipts have been offered to prevent this difficulty. Rats, mice, etc., may be entirely dispelled from a farm, by an application of a mixture of phosphorous and lard thoroughly combined, and placed on small bits of bread containing a small quantity of butter. These may be thrown about barns, cellars, hot-beds, and around trees. They will be eagerly eaten by rats and mice, and invariably cause their death. The various rat poisons, rat exterminators, etc., now sold in New York, are modifications of this mixture.—*The Working Farmer.*

ANALYSES OF SOILS.

WE are glad to find the following article from the pen of Dr. Higgins, State Chemist for Maryland, on the Analyses of Soils. Perhaps no subject has been more studiously avoided by a majority of the agricultural press, than that above referred to, while a miserable minority, who are unable to comprehend the laws of nature, or of science, have felt it easier to find fault with the labors of others than to labor themselves, and hence have indulged in vile vituperative attacks upon those who had the moral daring to advocate truth. Some may have been honestly mistaken, but the majority of those who have belabored true science in its best application, have been actuated by ignorance and egotism, and, therefore, we feel glad to find that Dr. Higgins is not among those who fear to face the charges of these satirists. It will readily be understood by the readers of the following, that they require a knowledge of the necessary physical conditions of the soil, or the means of obtaining, before they are enabled, by the help of analysis, to know the precise amendments required, including the time and mode of application.

They also require to understand the doctrine of the *advancement of ultimates by their use in organic nature*, which they will find explained at our page 27 of the present volume, and by which they will be enabled to judge of the conditions necessary for these amendments before their application for special crops. We commend the article of Dr. Higgins as worthy of careful study.—*Working Farmer*.

LABORATORY OF THE STATE CHEMIST
No. 29 Exchange buildings,
Baltimore, March 15, 1855. }

DEAR SIR: In the first number of the fifteenth volume of your paper, is an article on the Analyses of Soils, in which their claims are first misrepresented and then of course condemned, in a style as flip-pant as the statements are incorrect. This article is copied by you from the *Michigan Farmer*, who thus writes:

"During the past ten years there has arisen a class of men, who at all times were willing to make all the processes of agriculture depend on the announcements which were to come from the laboratory of the chemist." "According to the notions they promulgated it was just as easy to grow a crop of wheat on a field of dry sand, as it was on the best limestone soil that ever lay 'out of doors;' and so with all other crops: these mediums would prescribe as quickly for a soil as a spirit rapper for a diseased person."

The first paragraph quoted above is untrue. So far as my knowledge extends, there is not a respectable analytical or agricultural chemist who has maintained that *all* the processes of agriculture de-

pended "on the announcements which were to come from the laboratory of the chemist."

As to the second, there may have been, and doubtless are, quacks in chemistry, as there are in medicine, law, divinity, and in the editorial profession. But should an honest press condemn the science of medicine because quacks have professed to cure *all diseases* with some infallible pill or potion? Or shall law, "whose font is justice, and whose seat is the bosom of God," be abolished, because men, under its mantle, have practiced knavery? Ought the holy calling of the ministry, its purposes and uses, to be dispensed with, because men, under its guise, have violated its holy precepts? or should the agricultural press be suppressed because some who conduct it, and who hold themselves up for guides, know neither the operations of agriculture from practice or experience, nor its theory from study or science? It is an easy matter to make an allegation, but the proof is something difficult. If any one, under the knowledge of "*The Michigan Farmer*," or the editor of any other paper, has made professions such as those quoted above, let the *Michigan Farmer* publish his name, and condemn his pretensions, and not brand a class of men (agricultural and analytical chemists,) as fools or knaves, without proof and without reason.

I shall not follow this article in all of its italics, as it is as full of assertion as it is bare of proofs. I shall only examine some of the special allegations as they are made.

1st. "Liebig, the most celebrated of them," &c., "his compound proved utterly worthless in its application to the growth of crops." This is untrue. Liebig's Compound acted well on crops, but could not be prepared at a price which would make its application profitable. He only made the mistake which thousands unacquainted with manufactures had made before him: the cost of the raw material and its manufacture left no margin for profits, and hence the manufactory did not pay; but at this day, manures are made, sold and used with profit, dictated by the same principles which actuated Liebig in his factory. If Liebig is to be sweepingly condemned, then with him must be condemned all mineral manures: lime, magnesia, plaster, bone dust, and salt, must be declared useless, because he declared their essential necessity to all crops grown for food, and inasmuch as there was no natural source from which silicate of potash and soda could be procured as manures, and he endeavored to provide for this by forming them artificially; and the manufactory was too expensive to be followed with profit, we have an *ex cathedra* announcement that his compound was utterly worthless, and therefore chemical science of no use to agriculture!

We next have a letter of a Mr. S. W. Johnson, "a young gentleman pursuing a course of chemical instructions at Munich." This gentleman first adduces Boussingault's testimony against soil analyses, "that they are more curious than useful." Why did not Mr. S. W. J. also state, that Mr. B. believed that manures owed their value almost exclusively to the nitrogen (one of the constituents of ammonia) which they contained, and that therefore it was useless to ascertain the amount or determine the nature of the mineral matter in a soil, because mineral manures, as such, could produce but little benefit? If persons admit the force of this reasoning, that mineral manures, as lime, plaster, bone dust, salt, &c. &c., are useless, let them also coincide with the opinion of Boussingault, which is contradicted by the practical experience of every country where farming has been practiced, from the banks of the Rhine to the Potomac, and by farmers of every age, from the days of the Pharaohs to the year 1855.

As to the assertion "that analyses were made by Liebig, Rose and others, in which a material difference existed," I think it very doubtful that any such trial was ever made, and more so, if made, that some of them failed to detect important elements found by others; if they carefully examined the samples. Indeed, if we are to judge of the correctness of the other statements of this witness (Mr. S. W. J.) by this one—that the addition of one ton of guano to an acre of soil would make no perceptible difference in the results of an analyses, we must utterly discredit everything he says. The addition of the phosphate of lime in one-tenth of that quantity of guano, can be ascertained, and in less than that quantity to the acre has been again and again detected in my laboratory. I shall not discuss this subject, but refer you to my Fourth Report of the House of Delegates of Maryland, page 42, as marked and herewith sent.

The article from the *Michigan Farmer* then goes on to speak of the "physical condition" of the soil, as if the determination of that was not equally a part of an analyses as well as the mere determination of the constituents.

Stockhardt is next appealed to. He may say, but I have not seen or heard it, that a mere chemical analyses of a soil will not show its productiveness—and no agricultural chemist of any standing has ever said that it would. Stockhardt, however, most emphatically declares the necessity of a knowledge of the constituents of a soil as an indispensable guide for properly manuring it. Neither Stockhardt nor any one else, who has ever given much attention to the subject, would pretend to estimate the productive quality of a soil by a chemical analysis alone: but he nowhere in his lectures speaks against

the utility of soil analyses, but holds them, when properly performed, as indispensable adjuncts to the application of manures, and the interpreters of the principles on which depend successful results. His meaning then is perverted, if his language be correctly quoted; for on page 24, "Stockhardt's Chemical Field Lectures to Agriculturists, Cambridge, 1853," speaking of the nourishment of plants, he says, "for this reason, then, an exact knowledge of the chemical elements of plants, of the soil, of water, and of the air, must be deemed indispensable."—Again, on p. 49, "On increasing the growth of plants by manuring," he speaks of the absolute necessity of a knowledge of the constituents of the soil, in order to apply the proper manures. The work quoted above is a most admirable one on the principles of agriculture, and cannot be recommended too highly to the farming community, and I am sure that no intelligent planter or farmer of Virginia, after having once read it, would be without it for double its cost. The *Michigan Farmer* goes on to speak of the benefit of "soils lying fallow," "of fertility depending on a change in the condition of the soil," "of insoluble ingredients becoming soluble," and then comes the following: "In fact, if it be admitted that the chemist can estimate quantities with the utmost accuracy and nicety desirable, yet he cannot get qualities or conditions in their true light." If the writer knew anything of chemistry he need not be told that the qualities or conditions of substances, as to their solubility, &c., so far as vegetation is influenced by them, are as easily determined as their weight. He evidently knows nothing of analytical chemistry, and his opinion is worth nothing.

You state, Mr. Editor, that you have been induced to quote the above remarks because letters have been written to you on the subject of soil analysis, in which great stress was laid on the knowledge to be derived from them, as better than good cultivation and the manure bed; and you likewise admit that something may prove advantageous for a short time, as a temporary stimulant, and that stimulants exhaust in proportion to their power of forming an unnatural yield. Now, in reply: agricultural chemistry nowhere teaches proper cultivation nor the manure bed to be dispensed with; nor does it recognize any such thing as a stimulant to a soil: nor does it anywhere tolerate slovenly cultivation. It insists on thorough cultivation as the *sine qua non* of success. It teaches the necessity of certain substances in the soil as indispensable to fertility, and by analysis not only discovers the quantity of these substances, but also the form in which they exist, and directs how to change them into a proper form, if they do not already so exist; and also determines the quantity of the necessary constituents which

make a good crop of wheat, or any other crop, takes from the soil. The quantity of mineral matter, viz: lime, magnesia, phosphate of lime, gypsum, salt and potash, &c., in an acre of soil, can be determined by it with more correctness than practical men ever apply them as manures.

As to trusting to a mere chemical analysis of the soil to measure its productive capacity, no chemist at all acquainted with the practical operations of agriculture would take the constituents of a soil *per se* as a measure of its capacity. In my 2d Report to the House of Delegates of Maryland, p. 23, I have stated the conditions of soils under which vegetable life best flourished. "From the known and ascertained conditions of soils of known fertility, from the composition of crops that are grown for food, from the effect of the application of manures, it is to be concluded, that the productiveness of a soil, to the extent of the production of the plant, is due, 1st, to the presence in exact ratio, of the mineral constituents named above, viz: lime, magnesia, potash, soda, phosphoric acid, sulphuric acid, chlorine, &c.

2d. The condition in which these substances are found as to their solubility.

3d. The capacity of the soil, as to its physical texture, to supply the growing plant with organic food from the atmosphere.

The proportion of the several mineral constituents adapted to produce fertility, and the requisite physical structure, can be found, or at least approximated, by a large number of careful analyses, made in different seasons, of soils which are already productive.

The kind and quantity of manures best adapted to renovate worn out lands can be shown only by their analysis, and the noted results of manures upon these lands."

These are the doctrines which were laid down more than four years ago; and daily observation of the results of manures, predicated on soil analyses, and experience in making these, and the testimony of intelligent practical men, have confirmed my faith in their necessity as the cheapest and most certain aid to the fertilization and renovation of worn out lands.

If there be any gentleman in your State desirous of having these analyses made, let them send samples of their soil to this office, and I will guarantee them, to the full extent of my means, from any loss which they may sustain in consequence of my recommendations. They will find, that the analyses of soils leads to the cheapest, speediest and most certain method of improvement.

JAMES HIGGINS,

Southern Plant.] *State Ag. Chemist of Md.*

From the New England Farmer.

WORMS IN CORN-STALKS.

THIS worm is a great pest to the farmer, and although the complaints of its ravages are not so long and loud as those made against the cut-worm, yet it is none the less destructive to the interests of the corn-grower. As no article in any of the agricultural journals relating to its history has met my eye, and finding but few people conversant with its habits, you will pardon me for giving the results of my own observation.

Its color, when matured to full size, which is from one inch and one-eighth to one inch and one-quarter in length, is a bright red and slate color, interspersed with white. It deposits its eggs both on the corn and on the dry stover, and it is probable that but few kernels of corn germinate but what have one or more of these enter its germ. It is seldom that the stalk is wholly destroyed, but it will have a yellow, sickly appearance for a long time after its appearance above ground, until it shows the tassel, the top of which is generally covered by the worm's chips, besides the last or top leaves being perforated with numerous small holes. Some fields are injured in the above manner more than fifty per cent.

The remedy for this devastator is very simple, being merely to plant the corn near the surface of the ground, and be sure and not hill up any at the first hoeing. I have never seen corn dropped in the bottom of the furrow, or covered very deep, but what was more or less affected by its operations; and, by the way, I have never seen anything that would stop the ravages of the cut-worm so effectually, as to pull the dirt entirely away from its roots, as the worm cannot or will not work much above ground.

Any one who has made much observation on this subject, will remember that worms always work the most destructively just after the corn has been hoed. When corn has been favorably started, it grows faster than the worm gains strength, and will throw it out previous to the appearance of the tassel, the worm being then about one-half or three-fourths of an inch long. I have counted, in once crossing a field at this stage of the corn's growth, as many as thirty or forty just coming into daylight. Perhaps Dr. HARRIS can favor us with some light on this subject.

CORN-GROWER.

Hanson, Feb. 7, 1855.

PLANT a tree—train a vine—foster a shrub—deposit a flower seed and nurture its blossom—paint the fence—"slick up the yard"—fix the side walk—erect a tool-house—prune the orchard—make a hen coop—in short, give heed to neatness and to the little things that constitute the grand aggregate of health and public beauty.

ANSWER TO QUERY LAST WEEK.

PROF. NASH, editor of "*The Farmer*," published at Amherst, will please accept our thanks for his kind and prompt reply to questions propounded to him in our last paper. His opinions are much as we expected to find them, and are worthy of careful consideration.—*N. E. Farmer.*

Amherst, April 25, 1855.

EDITOR N. E. FARMER:—Dear Sir: I have been compelled to a hasty, and, to myself, unsatisfactory answer to your question; and, as I shall not issue another number under a month, I have no objection to your publishing, if you choose, the following, as an illustration of an idea, (perhaps it is but an *idea*,) which I entertain;—that land is long benefitted by the addition of heavy composts, while it must soon feel the exhausting effect of crops grown by homœopathic doses of anything. Three hundred pounds to an acre is less than three ounces to a ton of soil. If you take off crop after crop, and put on only three ounces to the ton of soil, where will be the soluble silica, the potash, the soda, the lime, the magnesia, the chlorine? all of which are removed in the crops; all are essential to the growth of plants; and next to none are returned in three ounces of manure.

Yours truly, J. A. NASH.

A REPORT.

The past five years, we have cultivated two adjacent acres, similar in quality, an ordinary loam, as follows:—1856 to corn, 1857 to oats, 1858 to clover, 1859 to clover again, and 1860 to corn.

One acre has been dressed each year with 300 lbs. of Peruvian guano, costing on the ground \$9.00.—The other has been dressed with four loads of manure, composted with ten loads of muck, five bushels of oyster shell lime, and two bushels of plaster; the lime and plaster put with the muck in the fall and the manure added in the spring. The cost of the latter dressing has been a trifle more than that of the former; but, as the labor has been done at times when our teams could not well be employed otherwise, we could about as readily furnish the compost as pay cash for the guano.

RESULTS.

	On Guanoed.	On Mucked.
1856. Corn and straw, worth,	\$50	\$40
1857. Oats and straw,	30	30
1858. Clover, hay & feed,	30	35
1859. " " "	25	40
1860. Corn and straw,	30	60
	\$165	\$205
	JAMES & JAMESON.	

Jamesville, Oct. 20th. 1860.

ANOTHER REPORT.

Since 1860 we have cultivated the same acres mentioned in our report of that year, dressing each acre, in 1861, with ten loads of barn manure composted with ten of muck, in 1862 the same, in 1865 with 30 loads, half manure and half muck, no dressing the intervening years.

RESULTS.

	On Guanoed.	On Mucked.
1861. Corn and stover,	\$40	\$70
1862. Oats and straw,	35	40
1863. Clover hay & seed,	35	40
1864. " " "	30	40
1865. Corn and stover	60	70
	200	260
Add former results	165	205
	365	465

Difference \$100, and the guanoed land not yet fully restored.

JAMES & JAMESON.

Jamesville, Oct. 20th 1865.

SALT FOR ANIMALS.

PROF. SIMONDS, Veterinary Inspector to the Royal Agricultural Society, observes, in relation to the action of salt on the animal economy, that "it is exceedingly beneficial in moderate quantities, but prejudicial in large ones. He thought horses might take with advantage from an ounce and a half to two ounces of salt, daily; but that an excess of it would render animals weak, debilitated, and unfit for exertion. Similar facts were applicable also to oxen, which accumulated flesh faster by the judicious use of salt, than without it. He cited Arthur Young and John Sinclair, to show that salt had a tendency to prevent the rot in sheep. Prof. S. added as his own opinion, that salt, by its action on the liver, and the supply of soda it yielded to the bile, led to a greater amount of nutriment being derived from the food. The substance, he said, was also well known as a vermifuge, destroying many kinds of worms in the intestines of animals, and conferring a healthy tone of action which prevented their re-occurrence. Several members of the R. A. Society, as Col. Challoner and Mr. Fisher Hobbs, stated that their experience led them to agree with Professor Simonds in regard to the value of salt for animals.

NEVER indulge yourself in ridicule on religious subjects; nor give countenance to it in others, by seeming diverted with what they say. This to people of good breeding will be a sufficient check.

From the American Farmer.

THE WHEAT CROP AND PRICES.

IN our August No., on the subject of the wheat crop, we stated on what we considered good authority, that Mr. Peabody had assured his correspondents in this country that there would be a foreign demand for all our surplus breadstuffs—and in the same connection, gave a statement from the Baltimore Sun, obtained from New York papers, of export movements already begun, and others in anticipation to a large extent. A writer in the National Intelligencer, who styles himself "One of the People," affects to be much aggrieved at the statement. He does not believe, he says, that Mr. Peabody has made any such statement—"He had no data on which to form an opinion"—which means that it is impossible that Mr. P. could have data on which to form an opinion of which "One of the People," was not informed. "And he is not the man to express an opinion without data." This is our own estimate of Mr. P., and for that reason being informed of his opinion, we inferred the "data," thinking it just possible that a highly intelligent merchant, deeply interested in the matter, and living in the very centre of correct information, might be somewhat in advance of us in gathering material for an opinion as to the probable demand for breadstuffs on the other side of the water.

"But after all," says the writer, "it is but the opinion of one man." Singularly enough, we only gave it as the opinion of one man, that one man being *one* George Peabody. But that the opinion of any one man in the month of July, as to the probable demand for breadstuffs through the year, is "liable to be realized or not; just as the mutations of trade, or the exigencies of commerce may direct," is a proposition so original and profound, that not being found in the "Books" nor likely to be brought out by ordinary sagacity, we think our readers will pardon us, that we have not before presented it to them.

The apparently earnest denunciation of the "tricks of speculators" does not move us at all except to laughter. It is itself too shallow a trick to impose for a moment upon the intelligent readers of the Intelligencer. When the crops are almost exclusively in the hands of the farmer, it is not the part of the speculator to push up the prices, and therefore we expect from him overflowing sympathy with the consumer, virtuous indignation against high prices, and a very flippant use of precisely such select phrases as this writer uses—"the luxuriance of vegetation on the soils of the oldest and most barren States"—"One of the most luxuriant harvests that ever a bounteous Providence spread upon the earth"—"the absence of everything fair, reasonable or

honest to sustain high prices." We won't apply to "One of the People" the fable of the wolf in sheep's clothing, but we think that fable might be well amended, by dropping the wolf and inserting a "bear."

As to the wheat crop of this season, we wish to state as briefly as possible our opinion. We have read all the statements made in the newspapers, all the extravagant accounts of letter writers, all the calculations and estimates which we have been able to get hold of, and without finding it necessary to denounce the authors at all, but preferring to account for their errors on philosophical principles, we think these statements, estimates and calculations are worth just as much as they were on the 30th of last September, when under their influence wheat sold in Baltimore, at \$1.40 to 1.55, from which prices it rose gradually month after month to \$2.25 and 2.70. We trust our contemporaries therefore will not think us disrespectful if we treat all their efforts in this behalf as nothing more than "a way they have" of filling up their columns with entertaining and agreeable matter—matter which might be instructive, had not farmers learned last year, the only lesson it can teach.

While we treat all such testimony, however, as "signifying nothing," we are not prepared to say that the crop is not, on the whole, a good one; because we have no *positive* information as to it. The tenor of our correspondence is indicated by the following extracts, which show the opinion of men entirely competent to form an opinion, and from various points of observation.

NOTTAWAY Co., Va., July 20.

The wheat crop turned out much better than could have been expected at the time it headed—much of the late wheat has been seriously injured by rainy weather, it having rained the last seven days of harvest."

CHESTERFIELD Co., Va., July 10.

"We have any quantity of rain lately, and consequently crops much damaged on low lands, and wheat injured in the shock."

RICHMOND Co., Va., July 6.

"I have finished my harvest, which is light. I had 80 acres in wheat, on good land, and I will not make more than 700 bushels, and my wheat, I thought on the whole, a fair average of the neighborhood. I think our crop is $\frac{1}{2}$, I have heard practical men estimate them $\frac{1}{2}$ short, but I hope for better things."

GOOCHLAND Co., Va., July 30.

"Our wheat crops hereabouts are generally short, especially those seeded late, and to which little or no guano is applied. From the best information I can

obtain, the crop of Virginia must be short of an average one. In the Joint-worm districts, very little was seeded, and the drought of spring cut short the crop very much in the tide-water region."

SUSQUEHANNA Co., Pa., July 30.

"The wheat crop is very poor here, in northern Pennsylvania. We have had almost continued rain here for the last month—what wheat is out is sprouting in the shock and swath. I have been informed by many intelligent farmers that they do not believe they will save enough wheat to make their own bread in Northern Pennsylvania."

St. Mary's Co., Md., August 6.

"Our corn crops are very promising; oats, a good crop—wheat too thin on the land from drought last fall, consequently too late for a hard winter and dry spring—fine season set in 1st June, and made a good crop for the straw on the ground—but not an average crop, or better than last year."

Extract from proceedings of a meeting of the Agricultural Society of Talbot county.

Resolved, That the wheat crop of Talbot county, just harvested, although uninjured by fly or rust, the quality of the grain being good, and the yield promising to be good to the very small quantity of straw gathered, is at least one third less than the average of the last ten years.

Such statements as these, with the universally admitted fact, of a most unfavorable seeding season, consequent late seeding—imperfect germination, and indifferent fall growth—a most severe winter, and as a consequence, an unusual quantity of winter-killed wheat, and a spring most unfavorable to the bringing forward of the crop until after the head was formed—fly in some districts, and chinch-bug in others, a great deal of rain immediately after harvest South of lat. 40, and long continued wet spells during and succeeding the harvest. North of that line, are considerations which weigh with us against the admission of a very large crop. On the other hand we admit, that all the grain which thin straw and short heads could grow, was fully and perfectly developed.

Now as to estimates of the crop, the largest is that of the New York Courier & Inquirer, being 175,000,000 of bushels, or 75 per cent. more than the crop of 1850. It will give our readers of Maryland and Virginia some idea of the extravagance of this estimate when we say that it increases the crop of Maryland from 4,494,680 to 6,000,000; that of Virginia from 11,000,000 to 15,000,000; that of South Carolina 300 per cent.; that of North Carolina 100 per cent.; that of Georgia 400 per cent.; Tennessee 600 per cent., and others in large ratios. The estimate of the Cincinnati Price Current is 114,000,000

for the whole crop, or 14 per cent. increase on the crop of 1850.

While we think the estimate of the Courier & Inquirer a very extravagant one, (the Herald makes it 168,000,000,) let us admit the very liberal estimate of 160,000,000, and how does it bear upon prices.—The English estimate of consumption is a quarter or eight bushels to each inhabitant. The Richmond Examiner, in a very able article on the subject of the crops, states it as a fact ascertained by two censuses, that it is not less in this country than five bushels per head. This would require, supposing 25,000,000 inhabitants, 125,000,000 bushels for bread—to which add ten per cent. of the crop for seed, would make 141,000,000, and to this add 10,000,000 for the purposes of Factories, paste, starch, horse feed, &c., gives a total home consumption of 151,000,000 bushels, leaving 9,000,000 for export. In 1847 England imported 35,900,000 bushels.—France has imported as much as 20,000,000 bushels in a single year—besides these are the Italian States and other grain importing States, bordering on the Mediterranean. The imports into England are said to have averaged for the twelve years previous to 1854, and exclusive of '46 and '47, 25,000,000—increasing progressively from 8,000,000 in 1840 to more than 49,000,000 in 1853. These large imports into England and France are, it is well known, mainly supplied from Dantzic and Russian ports, estimated to have reached before the war, the amount of 50,000,000* of bushels. Where is this amount to come from? Will our little surplus of 9,000,000 after supplying our South American and West Indian neighbors do it? Double it, treble it, and how much will it fall short? Our readers will say that this, too, like other newspaper estimates, is a matter of calculation. We give it for what it is worth. It will serve at least to show that farmers as far as at present advised have no occasion to be alarmed as to low prices.

*We are indebted for these figures, to the *Richmond Examiner*, and give them on its authority from its article on the subject of crops, of 5th August.

TRAINING A BALKY HORSE.—*The Michigan Farmer* says, a horse became balky in Detroit a short time since, and neither whipping nor coaxing could make him stir. A rope was then fastened round his neck and he was dragged a short distance by another team, but this did not effect a cure. The rope was then taken from his neck, passed between his legs and fastened firmly to his tail. In this manner he was drawn a short distance, and when the rope was taken off the hitherto unruly animal was perfectly obedient to the will of his master. We have seen this method tried with similar results.

GRASSES.

THE remarks of our esteemed correspondent *Putuxent Planter*, on the subject of grasses, are interesting and instructive. Whether the Red Clover is in the way of failing from among our grasses, as his reasoning goes to show, or for any reason is becoming more uncertain in its growth, it is of great importance to bring in such new grasses as will ensure the stocking of grazing and mowing lands. Well stocked grass lands are the very foundation of successful and profitable agriculture. Neither beeves, milch cows, sheep, hogs, horses, or grain crops can be profitably grown, without abundant grass crops, and these depend upon the knowledge of varieties adapted to our climate and soil, and which have in themselves intrinsic value.

Our correspondent is strong on the "Rescue," and another correspondent it will be seen, is equally inclined to "Rescue" Mr. Iverson from the reproach of the failure which others have met with. We have other letters on hand equally strong, which we withhold. The only testimony on the other side yet received is from a correspondent in Tennessee, who says,—"I was in the Rescue Grass speculation, and concur with "Doddridge," so far as it is concerned;" and one in Virginia to the same purpose. We have quite enough testimony to satisfy us that the Iverson grass is at least not a humbug. Whether it is to succeed generally to the extent that it has in some cases, is another matter, and must be determined by experiment. There is no need of any further "speculation."—There are quite enough who do believe in it, who will go on and give it a fair trial; let others hold off and await the result.

Putuxent Planter speaks of Rye grass, and asks information with regard to it. Perhaps the best we can give him is the opinion of Mr. Colman, in his *European Agriculture*, where he says, after speaking of clover: "The next grass most cultivated here is the Rye grass. Of this there are two prominent kinds, the Common (*Lolium perenne*) and the Italian (*Lolium Italicum*.) Of the former kind there are several varieties, distinguished mainly by the length of their endurance in the soil, some lasting only for a year, others three or four years, and some producing much more herbage than others. The common Rye grass has, in my opinion, no advantage over our timothy, either in its productiveness or quality of hay. Of the Italian Rye grass, I have already spoken much at large. It is in high repute, and is invaluable for

the alternate husbandry. "Its limited duration also," says Mr. Lawson, "fits it well for sowing in mixture with other sorts, intended for permanent pasture, as it dies out, and gives place to the weak, and slow-maturing perennial sorts, which are destined ultimately to fill the ground."

"The experiments of Mr. Dickinson, would seem to show that he has fallen upon a most valuable variety; and its superiority, to my mind, was decidedly indicated by a comparison of several specimens growing side by side with it in his grounds." The experiments of Mr. Dickinson alluded to, the opinion of Lawson and others, gave decided preference to the Italian over the common perennial Rye Grass. The experiments show immense results when every cutting was immediately succeeded by rich liquid manures.

On the contrary, Mr. John W. Gibbons, of Philadelphia, in the *Farm Journal* for July, says:—"When a resident in England, I several times saw Italian Rye grass growing, and once from necessity grew it myself, but can say little if anything in its favor. It is of a very coarse quality, and in my opinion only usable in its green state, when not more than quarter grown."

"I have not the least hesitation in saying that the Italian Rye grass is nearly, if not quite, as great an exhauster of soil as Timothy, besides it leaves a root which it is scarcely possible to get clear of again. I would rather have good oat or barley straw than the best secured Italian Rye grass." Here is as decided a difference of opinion after years of trial of the much lauded Italian Rye grass, as we have now as to the Rescue. The last named writer thinks well of the Perennial Rye grass, though others give the Italian the preference.

American Farmer.

UNITED STATES AGRICULTURAL SOCIETY.

A grand national exhibition of stock—horses, cattle, sheep and swine—open to competition to all the States of the Union, and to the British provinces, will be held by the United States Agricultural Society, in the city of Boston, on Tuesday, Wednesday, Thursday and Friday, October 23d, 24th; 25th and 26th.

Twenty thousand dollars have been guaranteed by patriotic gentlemen of Boston and its vicinity to defray the expenses; the city of Boston has generously granted to the Society for present use, a fine public square of fifty acres; and ten thousand dollars will be offered in premiums, in various departments.

The previous exhibitions of this Society—at Springfield, Mass., in 1852, and at Springfield, Ohio, in 1854—were eminently successful, and no efforts will be spared to make the present show, combining as it does, the four great departments of farming stock, superior to its predecessors.

The premium list, with the rules of the exhibition will be forwarded to all who will address the President, or Secretary, at Boston, to that effect.

It is earnestly hoped that all breeders, and owners of fine stock will feel it to be a duty, as it certainly is for their interest, to contribute to the show.

The list of entries, exhibitors and award of premiums, and all the proceedings of the exhibition, will be published in the journal of the Society, for 1855. Annual members of the Society, who desire to receive the journal, should remember to renew their subscriptions.

MARSHALL P. WILDER, *President*.

WILLIAM S. KING, *Secretary*.

BOSTON, August, 1855.

From the American Farmer.

APPLICATION OF GUANO IN DRILLS TO WHEAT.

OAKLAND, near Buckingham C. H., Va., }
August 4th, 1855. }

DEAR SIRS: In your next number of the "Farmer," will you please inform your subscribers whether the germination of wheat will be destroyed, or the tender roots of the wheat, by the application of 150 or 200 lbs. of guano by the drill, directly in contact with the wheat? I have desired to use one of those drills that apply guano with the wheat, but fear in a dry season, when the wheat comes up slowly and weak, that the causticity of the guano would destroy the tender fibres of the seed, and thereby produce a failure in the wheat's coming up. Please let us hear fully on this subject, if you have any experience.

Yours, very respectfully,

M. F. PERKINS.

We have no personal experience in the application of guano by the drill, directly in contact with the wheat; but, from our knowledge of the caustic nature of ammonia, forming an essential portion of guano, do think that the fears of our correspondent are well grounded. We certainly cannot recommend the drilling in of either 150 or 200 lbs. of guano, per acre, by the drilling machine, immediately in contact with the seed wheat. If it did not destroy, to a very large per centum, the

vegetative power of the seed, if thus concentrated around it, it would certainly interfere very materially with the grain producing properties of the plants, by giving birth to *much* straw, and *little* wheat. But there is another objection. All manuring of land for grain crops should be by the broadcast plan, as then, the improvement in the soil would be *general* and not *partial*, which should be the great object of every one who undertakes to improve his land. Our opinion is, that *guano* to produce the best effects, should always be plowed in to the full depth of the furrow, whether wheat be sown broadcast, or put in with the drilling machine. Either of the quantities named by our correspondent is sufficient to produce a good crop of wheat, the season being favorable. As it is the property of the volatile portions of *guano* to ascend, and the roots of the wheat plant penetrate the earth from the depth of a few inches to three feet, we can see no propriety in placing such manure in a position to be wasted more or less, as it would be, if placed in drills, on the recurrence of such a season as would produce decomposition; heat and moisture being the condition to bring about this result. Place the guano, then, at the bottom of the furrow say we; the inorganic parts of guano will be safe there, subject to the calls of the wheat plants, while the ammoniacal elements as they assume the form of ammonia, will, by their property of ascending, diffuse themselves throughout the soil, at every desirable depth, to meet the calls of the roots of the plants as they may spread out in search of such food.

BROADCAST SOWING MACHINE.

"A Mr. Brown, of Lawnbridge, Illinois, has invented a machine for sowing seed broadcast. A series of oblique cups are placed upon a rotating cylinder underneath the hopper, in combination with a distributing plate, which convey the seed from the hopper in such a manner that it is sprinkled with perfect regularity and evenness over the whole ground traversed by the machine."

We copy the above from the American Mining Chronicle, Iron Manufacturers' and Railway Journal, of July 28, and should like to hear more of this machine. The distribution of the seed with perfect regularity, is a most important point gained, one with difficulty attained by the hand, even by the most expert sowers—and unfortunately there are but few such. We should like to know whether it has been put to the test of practical use, and what its success in the field, whether it

is so constructed as any given quantities of seed per acre can be distributed, and what these quantities are; how many acres per day can be sown by it; what its weight, and what quantity of motive power it requires to work it efficiently; and what kinds of seeds it is adapted to the sowing of. A good broadcast sowing machine, of general application, worked by horse power, is much needed; and if this machine should prove to be of that character, it cannot fail to come into very general use.—*American Farmer*.

From the American Farmer.
GRASSES.

By PATUXENT PLANTER.

To the Editors of the American Farmer.

It is evident to the most inattentive observer of agricultural operations in the lower counties of Maryland, that the pastures are poorer, and the grasses generally less productive and luxuriant of late than former years. What is the cause? The lands have improved and other products, per acre, have increased, with the advantages of an improved system of cultivation. Is it that they have "tired" of the clovers and other kinds of foreign seeds? Have the lands turned "Know Nothings?" I think not, because the natural or *native* grasses, such as blue-grass, herd's, white clover and woolly head clover do not now spring up and grow spontaneously with half the vigor and rapidity that they did everywhere when I was a boy. Before the introduction of English clover and timothy, the clovers both white and yellow were abundant on stiff lands, and the woolly head clover was very rank and luxuriant on sandy soils, affording after the first of June, really rich and abundant pasturage; but it is not so now-a-days. They have been forced to give place to the improved sorts of imported grasses, and they, in their turn, have, it would seem, exhausted the soil of such qualities as serves for their sustenance, so as to flourish and yield a crop remunerative of the outlay in their production. In view of these facts, ought not other grasses be sought after and made to take their places for a few years. What those grasses shall be, time and experiment must determine.

Timothy sown in September with rye, and late in October, even in November with wheat, has lately proved valuable in this region, affording fine pasture after wheat harvest, and the next year a fine crop of hay. This grass should be sown at the rate of two gallons per acre even with clover,

over every acre seeded with clover. When sown alone, half a bushel per acre to ensure a good stand. Every farmer could with little trouble save his own timothy seed.

Orchard Grass does well on rich, stiff clays, and should be mixed with clover.

Red Top is indigenous, and succeeds on moist, low grounds, and stiff clay upland.

Italian or Perennial Rye-grass, is well recommended by yourselves, and commands the highest encomiums from numerous English writers. It is said to be capable, if well manured, to yield two crops of seed and one cutting of hay, or for soiling, and then furnishing rich pasture for at least two months in the year. It should be extensively tried.

Iverson Grass. This grass, named after its discoverer; and introducer of its qualities to the American Agriculturists, is destined to immortalize him. As a young, though highly intelligent and practical farmer remarked, on seeing its growth "the ultimatum in grazing, and rearing stock, has at last been found out; meat can now be raised to an unlimited extent with "*Iverson Grass*" and the "*Little Giant*!"—no matter what amount of stock a farmer keeps, he need have no anxiety about provender if he sows Iverson Grass and owns a Little Giant. I have no doubt as to its vast value. As far as my experience goes, Mr. Iverson did not say too much about it, when he said it was a perennial evergreen, very rapid in its growth, yields abundantly both seed and hay,—affords the best pasture; no wet, or drought, or cold or heat affects it detrimentally. I procured last summer one peck, and sowed it the second week in October, on land which had been worked in 1852 in tobacco, in 1853 in wheat, and tobacco in 1854. After the tobacco was cut, the land was plowed up, harrowed and furrowed with a very small plow, one foot apart, the seed sown, a brush run over the land, and a roller passed over it.—This land had no manure applied to it for either crop, and was only a tolerably rich piece of ground. It was a light loam. It was one quarter of an acre in a lot of three acres, two of which were in wheat, and the rest occupied with locust trees growing very thick. On the 1st of December I put on the lot a colt and calf, where they remained until the 17th of April. The grass kept green as the wheat all the winter. It was observed by many that the colt and calf preferred the grass to the wheat, which they hardly touched. Two gentlemen, who had laughed at my paying \$5.25 per

peek for it, measured it about the 25th of May, and found it 33 inches high, having made that growth in less than 40 days, during which time it had not had rain,—and it was not an inch high when the colt and calf were removed from it. I only saved three bushels of seed, but feel confident I could have saved twenty bushels if I had begun in time, and attended to it; but I was otherwise occupied, and did not know it was ripe, until a hard rain, and high winds after, had caused it to lose nearly all the seed. As it was sown on a farm distant from the one on which I reside, I did not pay that attention to it, which some of my mistrusting friends did, and who are so delighted with it that they have ordered all the seed I can spare. I fully expect in September to get a large crop of seed, which will be two crops. If it will give two crops of seed, there can be no doubt that 100 bushels of seed can be raised per acre per annum. From the appearance of the seed I cannot come to any other conclusion than that it is as valuable food for stock and poultry as *oats*.* I view this grass as one of the wonders of the age,—and must revolutionize farming to a great extent, if further trials sustain the past experience in regard to it; especially will it become the greatest of renovators if the culture of the *pea* be combined with it, as is so strongly recommended by Mr. Iverson. This is the month (September) for sowing grass seeds, and it is earnestly to be hoped that our friends will generally experiment with the various newly introduced grass seed, and good must come of it. Let us not hold back: let us remember what the introduction of red clover did for our fathers, and how slow they were in profiting by it, and how they repented not having used it at an earlier period in their system of farming, and while we recollect these facts, let us profit by the remembrance, and go earnestly to work in experimenting this autumn, in the effort to secure some grass that will yield us more herbage and forage; will be more certain to live, and less liable to be destroyed or injured by our variable climate than clover; for it is apparent we can no longer with safety rely upon it for either of these purposes, or for fertilizing the soil. We must either resort to new seeds or change our system of rotation, so as to keep the land for a few years clear of clover, when it will no doubt

again succeed, as has been clearly proven by such a course by one of my neighbors, who is an excellent farmer.

LOUISBURG, N. C., August, 1855.

To the Editors of the *American Farmer*.

Will you be kind enough to give us something more about horses? The horse is the noblest animal in man's employ, and the majority of them are badly managed. In New York, you say, fine horses abound, and are fed wholly on oats. Now, sirs, here in this State, a large work horse eats 30 ears of corn and 12 lbs fodder per day! What think you of such feeding as that? Is not corn necessary for a horse in some manner? either ground up or otherwise prepared? Do you think, or does Mr. Pratt in his lecture, (and by the way I will thank you, if convenient, to send me that lecture,) think that oats entirely will do for a horse?

Any "good points" on horses in your possession will be acceptable. M. L.

We will attend hereafter to further 'good points,' as suggested by our correspondent. As to feed, 10 ears of corn and good corn blades is a work-horse's allowance in Maryland, and is our own experience. It is understood that come what will we must have *blades* for the work-horses during the hard work of the summer, and the corn to be soaked ten or twelve hours in clean water. This summer, the "Little Giant" has crushed our corn and cob with decided advantage in the feeding. The German farmers of Pennsylvania, we understand, won't use corn for work-horses, when they can get *Rye chop*. Further north, we believe, oats are preferred. In Maryland they are used generally for quick draft and saddle horses.—EDITORS.

SULPHUR.—Sulphur is a good aperient for sheep, in doses of one or two ounces. It is more valuable, however, as keeping the bowels in a relaxed state when they have been opened by other medicines. It is the basis of every ointment for the cure of mange, and is useful in the common scab. It enters also into the composition of the best alterative powders.—*Randall*.

*This is a suggestion of my own, never having thought of it until this present writing. If the nutritive qualities of the seed be thus valuable, it will take the place of oats, becoming a perennial oat crop, at the rate of 100 bushels per acre.—What a gift it will be, should it so prove!!

GRASSHOPPERS.—The Editor of the *California Farmer*, in his journal of July 13, states that grasshoppers are exceedingly numerous and destructive. He had seen one that measured from three and a half to four inches in length.

From the New England Farmer.

EXPERIMENT WITH HEN MANURE.

MR. EDITOR: An objection made against the use of guano is that it "burns the corn" and prevents its coming up. Perhaps the following facts in relation to a kindred manure, may throw some light upon the action of guano, and suggest the cause and the preventive of the injurious effects complained of.

Some years since, I manured several rows of corn with the droppings of the hen-roost. The manure was placed in the hill, in pretty liberal quantities, and covered two inches deep with earth, on which corn was planted in the usual manner. A considerable portion of the corn failed to come up. The surface of the hill appeared dry and of a much lighter color than the surrounding soil, and the seed had undergone no sensible change, appearing as dry and hard as when shelled from the ear. Continuing the examination, the manure was found to be much augmented in bulk and completely saturated with moisture.

This then I supposed to be the cause of the mischief. The manure had absorbed so much of the moisture from the superincumbent earth, that the moisture remaining was insufficient to effect the germination of the seed.

Next year, profiting by experience, I saturated the manure with water before it was used. A layer of the manure was laid upon the floor and water sprinkled over it; then another layer and more water thrown on, and so on until the pile was completed, in a conical form, and a pailful of water applied.—Next day on examining the pile, the manure still appeared dry. The process was repeated again and again, until the manure appeared to be sufficiently moistened. The quantity of water was much greater than I had supposed would be sufficient. The manure was used as in the preceding year. The corn came up well, and I perceived no ill effects from the "burning quality" of the manure. A. W.

Stephenson, N. Y.

NUTRITIVE QUALITIES OF MILK.—In the Medical Convention, lately in session at Philadelphia, Dr. N. S. Davis, of Chicago, presented a report on the nutritive qualities of milk, and also on the question whether there is not some mode by which the nutritive constituents of milk can be preserved in their purity and sweetness, and furnished to the inhabitants of cities in such quantities as to supersede the present defective and often unwholesome modes of supply. The report says that when railroads were opened into the interior of the country, it was said that milk would be furnished to the residents of cities in the purity that it was found on farms, but a

sufficient time had elapsed to demonstrate that such is not the case. The conveyance of the milk from the farm to the cars, the transit on the railway, and the time lost in its delivery throughout the city, it was clearly shown, had the effect of making it unfit for the nourishment of a child. During the past half century, experiments had been made with a view of preserving milk in its pure state; yet it was but recently that a discovery had been made, by a gentleman in New York, which was to evaporate the water and mix with it white sugar, which renders it what is termed solidified milk. In his practice he had used this improved milk for the nourishment of infants with the most gratifying results, and after having kept it for three months; and he knew of its having been kept twelve months without any injury to its qualities.

THE CHEAPEST FOOD.—One hundred pounds of good wheat flour contain 90 pounds of pure nutritive matter and 10 pounds of water. One hundred lbs. of potatoes contain from 20 to 25 pounds of nutritive matter depending upon the quality of the potatoes; say 22½ pounds, upon an average, consisting almost entirely of starch, and 77½ pounds of water and inert matter. It requires, therefore, exactly four hundred pounds of potatoes to supply the same amount of nutriment that one hundred pounds of wheat flour supply. The best potatoes weigh about 64 pounds to the bushel, and a bushel contains 15 1-5 pounds of nutriment. At two dollars per bushel, or fifty cents a peck, the retail price lately in our markets, the nutritive portion of potatoes costs a fraction over *thirteen cents a pound*, which is equivalent to twenty-three dollars and fifty cents for a barrel of good flour. While flour has doubled in price only, potatoes have increased at four-fold rate.

Philadelphia Ledger.

THE BUTTER TREE.—On the banks of the Niger, in Africa, they have a tree called the Shea, from which excellent butter is obtained. The tree is like our oak, and the fruit somewhat resembles the Spanish olive. The kernel of the fruit is dried in the sun and then boiled, and the butter thus obtained is whiter, firmer, and of a richer flavor than that produced from the milk of cows, besides keeping sweet a year without salt. The growth and preparation of this article is one of the leading objects of African industry, and it constitutes a main article of their inland commerce. If present prices continue, we suggest that our dealers import a supply of vegetable butter from Africa. Or may be the tree itself can be acclimated, and every man have a butter tree in his yard.

NEWLY INVENTED STEAM PLOW BY A BALTIMOREAN.

WE have been aware, for some time, that Mr. Hussey, of this city, the Inventor of the Reaping and Mowing Machine, was engaged in constructing a Steam Plow, with the design to exhibit it in the French Exhibition, in Paris. We learn that he has so far completed his invention as to get up steam on two different occasions, and steam along the streets, several squares in the neighborhood of his manufactory. The stone pavements did not, however, afford a good opportunity to test its ability to plough, but we understand that its manageable qualities were pretty clearly manifested. If we can credit our informant, the machine, by its own power, started from the manufactory, down a narrow passage, through the gateway, and along the streets, turning several corners, and into the yard of another manufactory, on to the scales, where it was weighed; weighing, with water and fuel on board, about 6 tons. It then backed itself off the scales, and returned to where it started from, steamed through the gateway, up the narrow passage and backed itself at right angles into a shed, where it would have been difficult to have placed a two-horse wagon by the use of the horse.

The nature of the undertaking and the importance of having his invention in such an improved condition as not to hazard the credit of American Exhibitors, in Paris, has subjected Mr. Hussey to unavoidable delays, yet he has not, until very recently, abandoned the prospect of getting his plow into the Exposition before its close; but it seems, the late edict of the Emperor, withdrawing the favour granted to American Exhibitors, of entering their articles at any time, has closed up Mr. Hussey's way in that quarter. This should not be so great a disappointment to him, considering the Maryland Agricultural Society's Annual Show is now so near at hand, where we hope to see him turn as good a furrow as he could turn in France.—*American Farmer*.

COLOMBIAN GUANO.—We publish on another page an article from Dr. Piggott, on the value of this Guano. We have heard of several cases where it has been used during the past season with the most marked effect, comparing very favorably with the best Guanos.—*American Farmer*.

THE Southern journals represent that the rice crops are unusually flourishing, and that the indications promise more than an average yield for this season.

GUANO.—As our friends will be requiring their Guano during the present month, for their wheat crop, and will be making inquiry as to prices, &c., we would announce to them, that from the best information we can obtain there is no reason to anticipate any change in the terms and prices of the Messrs. Barreda & Bro. Agents of the Peruvian Government in this city, from those which have prevailed since 1st July.

If such should prove to be the case, (and of which we now have no doubt,) our prices for the current month will continue as follows:

\$52,00 per ton of 2240 lbs. delivered anywhere in the city.

\$51,25 per ton, delivered on board vessel at Guano Wharf.

\$51,00 when delivered at Guano Wharf, free of any expense to us. Terms, Cash, in Baltimore funds.—*Editors of American Farmer*.

RAISING SUGAR BEETS.—Being obliged from necessity, rather than choice, to raise beets upon a clay soil, I obviate the difficulty by spreading on a heavy coat of barn-yard manure in the fall, and turning nader just before the ground freezes.—Then during the winter I haul on about thirty loads of woods muck. In the spring I plow deep, and thoroughly mix the soil, manure and muck with the harrow. I then make the drills with the corn-maker, and sow the seed by hand. Thus treated, the yield from an acre is almost incredible, and stores the barn cellar with an invaluable food for all kinds of stock. No well regulated farm is without that amount of ground in beets; and when fitted in this way, the yield is more than double the number of bushels, when cultivated in the ordinary way.—*Rural New Yorker*.

NEW MODE OF RAISING FRUIT TREES.—A Bohemian agriculturist has successfully introduced a new mode of planting. Instead of using the process of grafting, he takes an offshoot of any fruit tree—an apple tree for instance—and plants it in a potato, both being carefully placed in the soil, so that five or six inches of the shoot shall be above the ground. This latter takes root, grows with rapidity, and produces the finest of fruit.—*Me. Farmer*.

EVERY one who has a spot of land should raise fruits, that he may have them fresh from his trees; for in no way will it yield more profit for one's own house; and where there is a market, they are profitable for that purpose also.

For the Arator.

RAISING FISH.

MR. EDITOR: I hope none of your readers will be startled at the following article, which I clip from a New York paper, on the subject of Fish Raising.—It has nothing to do with politics, and seems to have been headed as it is, simply with the view of attracting attention. The method of peopling rivers and creeks with the finny tribes indicated by the writer, may no doubt be successfully applied to ponds; and every farmer who has a small stream on his plantation, on which a small pond can be made, may by a little trouble and care, raise an abundant supply of fish for his family at all seasons of the year. It is hoped some enterprising farmer in Wake will immediately test its practicability. If successful, the example may be generally followed.

WAKE.

August 17, 1855.

SCALY KNOW-NOTHINGS.

SOME years ago a new and extraordinary mode of producing fish was discovered in France, and having been fully tested by several parties and found to answer all the required purposes, it is now in successful operation in various parts of Europe. The experiment was principally confined to Salmon, and several rivers in France, to which this valuable fish did not hitherto resort, are now filled with shoals of them. The salmon is peculiar in its habits, and is known to possess extraordinary instincts, one of which is, that it always returns from the sea to the river where it was spawned, unless prevented by some artificial obstruction. If this were not one of its habits, there would be no use in trying to produce salmon by artificial means in any lake or stream which that species of fish had not previously frequented; inasmuch as it might never return there again, but become a portion of a shoal migrating to some river already resorted to. Taking advantage of this instinctive love of birth-place which this scaly politician seems to have in common with our Know-Nothings, successful attempts have been made to turn its innocent patriotism to a profitable account for our provision-lacking population.

It has been satisfactorily proved that rivers, in which the fish do not largely abound, can obtain an unlimited supply; for it is so arranged that the spawn is protected from other fish that frequent the salmon beds and prey upon it, until the smelt is able to shift for itself. They descend the stream in due course and return next season to the same river, and so continue until they deposit their own spawn.—This they annually repeat until the river is abundantly supplied, unless they are captured or destroyed by

other members of the finny tribe that hunt them down in their native element and lie in wait for them at the mouths of rivers: but the eel which devours the spawn and ferrets it out commits the most destructive of those depredations.

The means by which the artificial production may be obtained are very simple and inexpensive. Oblong vessels of wood or wicker work are procured and partly filled with sand and gravel, and so placed along the river or lake that a moderate stream of clear water is always made to run over the gravel and escape through the sides of the vessel or bail et. When the fish are taken out of the river, during the breeding season, the spawn is gently pressed out of them by the hand, carefully deposited in the vessels thus prepared, and covered over with gravel and sand to the proper depth. When this is adroitly performed the old fish is never injured. If the supply of running water be regularly kept up, nearly all the ova are pretty sure to arrive at maturity and produce myriads of salmon in places where the fish never before ascended from the ocean. The important discovery of producing fish by this artificial process has been largely taken advantage of both in Scotland and Ireland, where lakes and rivers, far removed from the usual spawning beds, are now amply supplied with the choicest salmon.

It does not appear that this mode of fish production has been to any extent, if at all, had recourse to in this country, where such facilities for it are afforded by our numerous rivers and extensive lakes.

If spiritedly undertaken and generally carried out it would become a source of profit to those embarked in the business, and increase to any conceivable extent an article of food which is now a luxury, and placed by its dearness beyond the reach of a large portion of our working classes. While American enterprise encircles the globe and puts life and vigor into commercial projects of the greatest magnitude, it should not overlook what might be turned to useful and profitable account at home. To have the remote parts of our lakes and rivers teeming with the choicest of fish, would confer benefits upon the laboring masses of our population of no ordinary kind. It is, at all events, worth the experiment, and should not be much longer neglected.

A treatise on artificial fish breeding, translated from the French by Mr. W. H. Fry, was published last year by one of our booksellers, but we are not aware of any attempt on a large scale at pisciculture having been made here. Attention has lately been directed to the subject by an eminent sporting naturalist, and we hope that some enterprising and benevolently disposed citizen may be induced to give his attention to it.

The experiment should be tried in rivers that are not so much infested with steamboats, fykes and drag-nets as the Hudson, for we doubt if even the strong love of its native waters, which is as much a part of the nature of the salmon as the tender quality of its flesh, would induce it to return to its dangerous and troubled home, if it were hatched in the upper waters of our own great river. The salmon, which once abounded in the Connecticut, have long since been driven from that river by the presence of steamboats and the erection of dams and bridges, and we do not believe it could be induced to return, even though it should be bred there.

ROCKY POINT, ATTALA CO., MI.)
August 24, 1855.

THOS. J. LEXAT, Esq. *Dear Sir:* I have received all the numbers of your most excellent Agricultural Journal (*THE ARATOR*) except the June number, which I have never received; and as I wish to retain all the numbers and have them bound, (for future reference) you will please forward the June number.

This is my first year at farming, and having made a fine crop of corn and cotton, (which is the principal production of our country) I attribute the management of it greatly to the ideas I received from agricultural journals. I do not receive them until the middle of the month. I wish I could get them earlier in the month. I would like to assist you by way of procuring subscribers, but I am living in a neighborhood of quite small farmers, who think they know it all, and would not give their opinions for any one's; but I am glad to know that I have as good a crop, if not better, than the most of them.

Enclosed please find one dollar in stamps—my subscription for the year. And when the time expires, I expect to renew it.

Very respectfully,
D. CLINTON THOMPSON.

REMEDY FOR THE BITE OF A MAD DOG.

WHILE on a tour recently in the vicinity of the Ottawa river in Canada, we frequently heard it said, that there was no difficulty in preventing the usual fatal results from the bite of a mad dog. It was said the remedy had been long known and administered with invariable success by many of the Catholic clergy throughout the Lower Province. Having ascertained that the Rev. John Edwards, Baptist minister at Clarence and Petite Nation, could furnish the recipe, we applied to him, and he has favored us with the following:

LORNER TUCKER, Esq.—I send the annexed recipe for insertion in your valuable paper, hoping it may meet the eye of any individual who should have the misfortune to be bitten by a mad dog. Of the eff-

cacy to prevent Hydrophobia, I have the fullest confidence, having seen persons when bitten, who took the remedy, and no harm followed, whilst animals bitten by the same dogs, died raving mad, or were killed to prevent mischief.

A gentleman of undoubted veracity, from whom I obtained this recipe 20 years ago, assured me that he had known it to be used successfully in at least 20 cases, where there was not a doubt as to the madness of the dog inflicting the bite, nor of the entire exemption from any serious consequences to the person bitten, after following this prescription.

I would add that while many instances have come to my knowledge of persons having been bitten by mad dogs, in this part of the country, I never heard of a single fatal result; which I am satisfied must be attributed to the knowledge of the above remedy. —JNO. EDWARDS, Baptist Minister, Clarence and Petite Nation, Ottawa River, Canada.

Recipe.—Burn oyster shells to lime; pulverize and sift through fine gauze or muslin; put two table-spoonfuls (heaped) into a vessel, mix with eggs to the consistency of cream or butter for pancakes, and fry in a pan with a good sized piece of fresh butter or some sweet oil.

Let the person, as soon as may be after being bitten, eat this cake, in the morning, and taste neither food nor drink for six hours, when he may eat and drink as usual. Three such cakes to be eaten as above, on three alternate mornings.

This is for an adult; the quantity for a child may be administered according to age.—Country Gentleman.

TO THE EDITOR OF THE SOUTHERN PLANTER:

As the club (and my wife) seem to think my experiment with sweet potatoes in '52, didn't prove anything, I concluded to try it again—only pushing it a little further. I dug them last fall, the 25th of November; they kept finely until the 26th of April, when we ate the last. My wife gives up that it is owing to late digging, and I think the club ought to, as it is the first time I ever knew her to give up any thing. Respectfully submitted, by

AN EXPERIMENT IN KEEPING SWEET POTATOES.—I have tried various ways to keep potatoes—have put them up in a cellar and kiln, both out and under shelter, but never succeeded preserving them longer than Christmas, until this winter. They were dug between the 20th and last of November, after many severe frosts, and the day we dug the ground was frozen. We put them up in the same cellar we have always used, in the same manner, in barrels packed with pine boards, and they kept finely until time for planting in March.

Respectfully submitted to the club, by
May 11th. 1855.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C. OCTOBER, 1855.

RE. We are compelled again to claim some indulgence from our readers—having been prostrated by sickness for several weeks, which has not only prevented the usual attention to our Editorial Department, but retards our arrangements for illustrations and embellishment. These, however, shall be attended to hereafter, particularly should the patronage and encouragement which we have a right to expect, be bestowed upon our paper by the State Agricultural Society and the friends of improvement generally.

RE. Let it be borne in mind, that the Annual Address before the State Agricultural Society, will be delivered at the coming Fair, by the Hon. THOMAS RUFFIN: a circumstance which, of itself, will attract multitudes of our citizens, and even many from other States, to the Fair.

Let ample preparation be made for their accommodation. The people will be here, in vast crowds, from all quarters. We anticipate a most brilliant and successful affair.

JNO. S. DANCY, ESQ..

Or Elgcombe, a gentleman highly distinguished for his extensive scientific and practical agricultural knowledge, and who was the first President of the State Agricultural Society, will deliver the Annual Address at the Union Fair, to be held in Henderson. Our friends have been fortunate in securing the services of such an advocate.

RE. We are indebted to the Euzelian Society of Wake Forest College for a copy of the address recently delivered before the Societies of that Institution, by Geo. S. Stevenson, Esq., of Newberne. The subject of the Address is the Educated Farmer. We shall take occasion to give it a careful examination and furnish our readers with extracts.

The first Annual Fair of the Chowan Agricultural Society will be held on the 25th and 26th October instant. A long list of premiums is published for the occasion.

RE. We earnestly request all who have not paid their subscription to the Arator, to be sure to bring or send the amount of the same at the Fair.

TO THE CITIZENS OF RALEIGH.

We need scarcely do more than call the attention of our community to the following article, which is clipped from the Greensboro' Guardian. "*The last paragraph*," to which it alludes, refers to the importance of making ample preparations, in this place, for the accommodation of visitors to the Fair. The remarks of the Guardian prove the propriety of our call upon the citizens to make that preparation, and publish it abroad, in time to assure all, in every section, who desire to come, that they will meet with a cordial welcome and comfortable entertainment.—This, we know, our citizens are ready and willing to do. Their high sense of duty and interest, as well as their generous hospitality, will alike prompt them to a cheerful and noble response to the call. All they want is a clear understanding of what is necessary and proper to be done, and concert of action, to perform it honorably and to the satisfaction and praise of the whole State.

A gentleman of this city of the highest respectability, and ample pecuniary means, suggests that a large, cheap, but comfortable plank house be erected on the Fair Grounds, of ample size to accommodate many persons temporarily; and that, when completed, it be placed in the hands of some competent person, who will take the superintendence of it, and receive and entertain visitors at a moderate charge. He is willing to subscribe liberally for the erection of such a Fair Ground Hotel; and by proper efforts, a sufficient subscription could readily be raised for the purpose. Would it not be well for the Mayor to call a public meeting forthwith, to take the matter into consideration?

The people of Raleigh and Wake County, generally, should also become members of the State Agricultural Society. Let them manifest their interest in the cause in every way possible—by membership, by active participation in the proceedings, by kindness to strangers, by liberality in their contributions for the public accommodation—and we'll be security for the perpetual existence and success of the Fair at, and the universal good feeling among the people of the State towards, "THE CITY OF OAKS."

Read the following from the Guardian, and take the hint it suggests:

From the Guardian.

STATE FAIR.

UNDER the Agricultural head will be found a general call to the State Fair, taken from the columns of the Arator. We readily join in advising all to go up and lend a helping hand. It is a great State work. But from past experience, we more particularly join in with the sentiments contained in the last paragraph. It will be utterly useless to invite

the people to come, unless some arrangements are made for their entertainment. To be crowded, packed and piled up, like we were last Fall, with about two hundred others in a small house, is beyond endurance. And our country farmers, always accustomed to room enough, will not stand it. These remarks are not made to deter any from going, but merely to suggest the VERY NECESSARY preparations to accommodate a large number, in a manner worthy of the City of Oaks.

THE APPROACHING FAIR.

In our September number, we invoked public attention to the STATE FAIR, to commence in this City, on the 16th of the present month, (October) and urged for it the contributions, personal attendance, increase of membership of the State Agricultural Society, and support in every point due to, and which may tend to advance the patriotic designs of that benign institution.

These occasions are interesting, instructive and profitable to the people of the WHOLE STATE, in proportion to their intelligence, liberality and patriotism. They bring together the enterprising spirits of the land, and present to the admiring inspection of the spectators a concentration of the choice fruits of agricultural and mechanical industry, in all its branches. What a wide and interesting field is here presented, for public spirited men to come forward and evince, by *word and deed*, their zeal and readiness to contribute to the march of improvement, first of all, which has commenced in our agricultural pursuits, and, secondly, in all the arts, trades and interests of our beloved State. Let, then, every one who can, come to the Fair, and let all who come, be actuated by the double object of acquiring and imparting information. Every one who contributes, if it be but a single sample of an improved variety of fruit or grain, or implement or tool, will do this.—And meetings of the State Society should be held, at suitable intervals during the exhibition: at which succinct statements should be made of the progress and method of improvements in the different sections of the State: The peculiar products, advantages and disadvantages, difficulties and wants of each varying section should be made known: Experiments and results should be given: And plans for future individual and State operation boldly suggested. Every intelligent and enterprising member of the Society, at least, should come prepared to contribute something in this way to the general stock of useful information. Write it out before you leave home, upon consultation with your neighbors—that it may be ready to be delivered before the Society, and to be sent to the press. And if anything should occur to present itself, coming before the Society, send it,

for publication, to the Arator. We assure all, that the plainest and most unpretending, who have useful information to impart, will be heard with as much respect as the most distinguished. Such proceedings, published and scattered over the State, we verily believe, would greatly accelerate the work of improvement; and we respectfully call the attention of the State Society to the subject.

The Judges who have been appointed to award the premiums on the occasion, have a most important part to perform. Indeed, the fate of the institution itself will depend, in a great measure, upon the fidelity and justice of their decisions. Nothing short of absolute impossibility should prevent their prompt attendance, and the faithful discharge of their duties. Like the centumvirs, or the tribunal of the hundred of the Carthaginians, they were selected on account of their superior merit, and required to act without any salary or reward; the single motive of the public good being thought a tie sufficient to engage honest and patriotic men to a conscientious and faithful discharge of their duty; and like the thirty Judges of ancient Egypt, they should wear the blind image, or emblem of truth and impartiality, at least in their hearts, and let that have the only sway in their judgments.

We have more to say: but from weakness and exhaustion, caused by severe sickness, we can hold the pen no longer. We hope the Press of the State generally, will take up the subject, and *keep it before the people*.

MAGISTRATE'S COMPLETE GUIDE.

HENRY D. TURNER, Esq., of the North Carolina Book-Store, has in press and will publish soon, a work under the title of "THE MAGISTRATE'S COMPLETE GUIDE, a practical summary of the laws of the State of North Carolina, and the decisions of the Supreme Court, defining the duties and jurisdiction of Justices of the Peace, out of Court, under the newly Revised Code of 1854—'55, together with all necessary forms and precedents"—by EDWARD CASTWELL, Esq., LL. B. We concur with the Editors of the Standard, who say: "This *North Carolina Justice* will doubtless be a valuable work—such an one as every Magistrate in the State will find indispensable to the correct discharge of his duties.—Such a work is much needed at this time. A large edition will be published, but those who send their orders first will be first supplied. Address Henry D. Turner, Raleigh, N. C."

The first bale of new cotton, from Robeson county, was sold here on Tuesday the 7th instant, for 10,85. The cotton was raised upon the plantation of our worthy friend John McNair. The quality we learn was excellent.—*N. C. Argus*, 15th September.

HOW TO RAISE THE IRISH POTATOE FROM SEED.

A friend from Orange, some years ago, who was very successful in raising Irish Potatoes, told us his father systematically propagated them from the seed, and produced regularly a new variety. The following was his *method of saving the seed* :

After the balls, containing the seed, which grow on the top of the vines, were thoroughly ripe, they were gathered, with 10 or 12 inches of the vine attached, and hung up, like a string of pepper or onions, in a cool and dry place, until the following spring.

Of Planting.—As soon as the frosty weather had passed away, the seed were rubbed out of the balls, sowed in a light rich square of the garden, and covered about as deep as he covered his beet seed.

Of Cultivation.—When the plants were up, they were carefully kept clear of weeds and frequently lightly stirred with a hoe. If any buds appeared showing signs of blossoms, they were immediately pulled off. The vines were thus permitted to grow until ripe, which was indicated by beginning to dry. They were then taken up, with their little tubers from the size of a buckshot to that of a bullet, which were preserved in dry sand until the ensuing spring, and then planted, as before, but a little deeper: and the produce of that (the 2d) year, was, potatoes as large as walnuts, which were preserved in the same way, until next (3d) spring, when they were planted for a crop, and proved themselves to be either a superior or inferior seedling. If the former, they were raised until one superior or equally good was produced. The fine, large, round, smooth-skinned Alamo potatoes, we learn, was produced in the same way. We should be glad to see this attention paid to improving seed of every description, by our farmers generally. It, however, requires a nice hand to do it; but why should not all be nice farmers? It don't cost half as much trouble to be nice as it does to be slovenly farmers; and the results of the former are so much more desirable and happy, that it is enough to astonish even the sluggard himself, that such a miserable drone as he does not immediately change his course—throw off his lazy, bungling, careless, drivelling habits, and set about at once, and in earnest, the work of reform and improvement. But these are the sort who cherish a supreme contempt for all such quackery as book or scientific farming; and never take or look into an agricultural paper, to learn what progress our noble art is making among the intelligent, systematic and industrious, and shun every thing that would tend to raise an elevating aspiration or resolution in their bosoms.

STAFFORD'S THRASHER.

The editor of the *Arator* has had in use the past season, STAFFORDS' Grain Thrasher and Horse Power, which has executed its work so well, that he takes great pleasure in recommending it to his readers. It has thrashed out thousands of bushels for our neighbors, and every one, as far as we have heard, is delighted with its operations. It is a simple, cheap, yet strong, easily managed and efficient machine, preferable to any we have seen from any other quarter. We are proud to say, this noble implement is manufactured in North Carolina, by one of our own enterprising and worthy fellow citizens, who deserves the most liberal patronage. We go in for encouraging home manufactures. Let the word go round.

A correspondent makes some inquiries concerning the value of charcoal, as a fertilizer, which we are prevented from answering, in this number, by indisposition. We hope to be able to answer his interrogatories in our next. In the mean time, he may rest assured that Charcoal may be employed as a valuable adjunct in improving the soil.

From the Standard.

THE Executive Committee of the State Agricultural Society, assembled at the Fair Grounds on Wednesday last, and made several orders for the improvement thereof. They determined that the track for trotting matches should be inclosed with good substantial railing, so that the Marshals may hereafter prevent the crowd from pressing upon the track while the racing is going on. The buildings, fences and stalls are all to be thoroughly white-washed, and additional stalls made if necessary. All exhibitors of animals are requested to inform the Chairman of the Executive Committee, Dr. Crudup, of the number and class of animals they intend to exhibit, which will be a sure means of securing stalls for the same. As it will be more convenient to manage and stable cattle with halters after they reach the Fair Grounds, it is required that all cattle for exhibition shall be trained to stand by them, and each person will do well to bring his halters along with him. Especially should they be haltered, so that the Judges may have them led out and fully inspected before awarding the premium.

The Judges, whose names have been published in the premium list, are earnestly requested to attend punctually on Monday, at the Fair Grounds, so that they may make every preparation for awarding premiums on the next day.

Arrangements will be made with the Railroads to transport all animals and articles for exhibition, free of charge; and the Railroads would do a cash business.

ness by running an accommodation morning and evening train to Raleigh, during the Fair, by which persons living at Henderson, Goldsboro', Hillsboro', and other places, may spend the day at the Fair Grounds, and sleep at home at night.

Committee has restricted the carriages to running on the east side of the buildings, and ordered a new exit gate on the south side of the Fair Grounds, which will add much to the comfort of visitors. It is expected that a more *systematic and extensive arrangement* will be made in Raleigh for the accommodation of visitors.

It is good that people of different localities of the State should be brought together, to compare notes, to elevate the standard of improvement, to push forward the car of progress; and, as there is no place more suitable than the capital of the State, and no occasion more appropriate than the State Fair, all professions, trades, and interests are most respectfully and earnestly invited on 15th of October next.

S. P. V.

From the Charlotte Whig.

AGRICULTURAL SOCIETY.

At a meeting of the Mecklenburg County Agricultural Society, August 24th, 1855. Present, A. Springs, President, C. T. Alexander, B. W. Alexander, D. Parks, J. H. Walker, John Walker, A. B. Davidson, H. B. Cunningham, Dr. J. W. Ross, R. F. Davidson, C. Overman, Robert Henderson, J. L. Springs, E. C. Grier, Wm. Johnston, Dr. J. M. Davidson, P. J. Lowrie, Dr. J. M. Strong, and M. D. Johnston.

There being a quorum present, the President took his seat and called the meeting to order.

The Secretary being absent, P. J. Lowrie was appointed in his stead *pro tem*.

A committee consisting of D. Parks, Wm. Johnston and John Walker, were appointed to revise the By-Laws of this Society by the 22d of November, next.

November 22d, 1855, was the day fixed upon as the day for holding the Annual Fair of this Society. The following committees were appointed to examine and award premiums for different articles:

On Live Stock.—John Walker, C. Overman, J. H. Davis.

On Grain, and Vegetables of every description.—Dr. J. W. Ross, C. T. Alexander, and Robt. Henderson.

On Goods of Domestic Manufacture.—Gen. J. A. Young, Thomas N. Alexander, and B. H. Davidson.

On Agricultural Implements, Vehicles, &c.—Dr. J. M. Davidson, Col. B. W. Alexander, and J. L. Springs.

It was moved and carried, that the list of premiums offered by this Society be published three times in the papers of this town.

Twenty-five cents (25 cts.) was fixed upon as the price of admittance to the Fair ground on the day of exhibition.

P. J. Lowrie was appointed to select and procure suitable badges for the officers and members to wear on days of exhibition.

J. A. Young was appointed Marshal of the day, (22d Nov.)

P. J. Lowrie was appointed to confer with the Charlotte Sax-horn Band, and invite them to play for the Society on that day.

On motion, the Society adjourned to meet on the 22d November next, at 10 o'clock A. M., at Kerr's Hotel.

A. SPRINGS, President.

P. J. LOWRIE, Sec'y. *pro tem*.

PRINCIPLES OF AGRICULTURE.

A paper was recently read before the Farmers' Club of New York, by Dr. R. L. Waterbury, which seems to have conflicted with the views of Messrs. Mapes, Warring & Co., who undertook to answer it. On reading the report of their remarks, Dr. W. found it necessary to disclaim the views attributed to him, and in doing so, gives the purport of the paper read by him as follows:

That, without the use of any foreign fertilizer, produce enough may be sold off from a farm, in most portions of the Union, to pay the expenses of conducting it; and yet, by judicious management, the soil may be annually improving in condition.

That this can be effected the easiest in those portions of the Union where the value of land is the least, and where, consequently, the farms are largest, and the longest rotation of crops can be profitably resorted to.

That no system of farming is deserving of our attention that does not recognize the necessity of farm exports.

That a State may, to some extent, export agricultural products, without diminishing its capability to produce them.

That an inspection of the census returns of the United States and of the State of New York shows that the amount of crops of this State has increased for the last ten years much faster than the area of improved lands in the State, and that, consequently, the land cannot be "running out."

That the processes of Nature, to which we owe the present alluvial condition of the surface of the earth, are still at work, and that land left entirely to itself will, by the action of water and vegetation, improve in fertility.

That the process of tillage alone may be made to accelerate this improvement, and help to provide for the necessary waste of marketing.

That rain penetrates the porous parts of the earth's

surface, and percolates through them until it comes to impervious strata, and that it runs along this impervious strata until it finds egress as springs, and that spring water is impregnated, more or less, with saline substances.

That the evaporation which is continually going on of the water from the surface of the earth, leaves the saline matter in the surface, as but a small part of the water that falls as rain ever reaches the sea.

That the Mineral Springs of Saratoga, and other localities are exaggerated illustrations of this process, and the more fertile condition of valleys is to be, in part, referred to the same cause.

That, in the present thinly populated condition of our Continent, the true purpose of American agriculture, at this time, is to wisely direct these natural forces, rather than apply pinches of guano, and tea-spoonfuls of super-phosphates to individual plants, although such applications may pay on some farms, and probably do pay well all marketing gardening operations.

The objection to soil analysis is this:

The difference between the early soil of Virginia and the same soil in its present condition has been made by the loss of 1,200 pounds of alkalies to the acre. But this 1,200 pounds forms not quite three ten-thousandths (0.00027) of the soil to the depth of a foot.

The idea that any amount of variation, within such infinitesimal limits, can be measured and defined by quantitative analysis, is absurd. Top dressing of the same amount would, in the same way, fail of being detected.

That directions given by agricultural chemists have led to successful results is undoubtedly true; but these directions have been founded rather upon experience and observation than upon chemical analysis.—*Country Gentleman*.

LARGE DROVE OF CATTLE.—Some time about the last of August or first of September, a drove of some 250 cattle passed through this City, from South Carolina, on their way to Virginia, to be grazed and fattened—in palpable violation of the statute in such case made and provided—the law of this State prohibiting the driving of cattle from South Carolina or Georgia, into this State, between the 1st of April and 1st of November, under the penalty of four dollars for each and every head. The same law prohibits the driving of cattle from the long leaf pine country to the high lands, at the same season; and also requires persons removing cattle from any section of the State to another to have a certificate of the place from which they were driven, and of their healthy condition. *Fide Rev. Stat. Vol. 1, p. 100.*

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tubular, Flue, and Cylindrical Boilers, Circular, Vertical, and Portable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

1-1f

THE SCIENTIFIC AMERICAN.

ELEVENTH YEAR.

SPLENDID ENGRAVINGS AND PRIZES.

THE ELEVENTH Annual Volume of this useful publication commences on the 17th day of September next.

The "Scientific American" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information, relating to the various Mechanic and Chemist Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of Practical Science is calculated to advance.

Reports of *U. S. Patents* granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

The Contributors to the Scientific American are among the most Eminent Scientific and practical men of the times. The Editorial Department is universally acknowledged to be conducted with GREAT ABILITY, and to be distinguished, not only for the excellence and truthfulness of its discussions, but for the fearlessness with which error is combated and false theories are exploded.

Mechanics, Inventors, Engineers, Chemists, Manufacturers, Agriculturists, and people of every profession in life, will find the Scientific American to be of great value in their respective callings. Its counsels and suggestions will save them Hundreds of Dollars annually, besides affording them a continual source of knowledge, the experience of which is beyond pecuniary estimate.

The Scientific American is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with several hundred original engravings.

Specimen copies sent GRATIS.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8.

For further Club rates and for statement of the fourteen large CASH PRIZES, offered by the publishers, see Scientific American.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to

MUNN & CO.,

122 Fulton Street, New York.

Messrs. MUNN & CO., have been, for many years, extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES.

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR IRONS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-11.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers' prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical.

Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARRING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of
SPRING AND SUMMER CLOTHING, with a
well selected stock of Gents' FURNISHING ARTI-
CLES. Our facilities for *buying cheap*, and having
our goods *made up* under our own eye makes it an
object for those in want to call and examine our
stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

TABLE OF CONTENTS.

Agricultural Shows for 1855,	204
Analyses of Soils,	205
Approaching Fair,	220
Agricultural Society,	222
Agriculture, Principles of,	222
Broadcast Sowing Machine,	212
Butter Tree,	215
Committee, Executive,	221
Cotton, Bale of,	220
Cheapest Food,	215
Chemistry, Vegetable,	203
Carob Tree, or St. John's Bread,	198
Cork Tree,	200
Colombian Guano,	216
Corn-stalk, Stacking of,	223
Deep Plowing, good effects of,	202
Daucy, John S.,	219
Experiments with Guano and compost—au- swer to query, (<i>Important</i>),	208
Farmers' Club, N. Y.,	201
Faithful Wife,	201
Fruit Trees, new mode of raising,	216
Fish, raising of,	217
Grasses,	211, 213
Guano applied in drills,	212
Grasshoppers,	214
Guano, Prices of,	216
Hedges,	193
Horse-feeding, &c.,	214
Hen Manure, experiment with,	215
Insects injurious and beneficial,	198, 200
Irish Potatoes, how to raise,	221
Liquid Manure, waste of,	204
Mangosteen,	199
Mice Girdling trees,	204
Milk, nutritive qualities of,	215
Mad-dog Bite, remedy for,	218
Magistrate's Complete Guide,	220
Pistachio Nut,	200
Sweet Potatoes, experiment with,	223
Sugar Beets,	216
Sub-soil Plowing,	196
Salt for Animals,	208
Sulphur for Sheep,	214
Steam Plow, by a Baltimorean,	216
Training a baulky horse,	210
To the Citizens of Raleigh,	219
United States Agricultural Society,	211
Worms in Corn &c.,	207
Wheat Crop and Prices,	209

THE ARATOR.



Agriculture is the great art, which every citizen ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I.

RALEIGH, NOVEMBER, 1855.

NO. VIII.

NORTH-CAROLINA ARATOR.

BY THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, *in advance*, or \$1.50 *if not paid until the end of the year*.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

We recommend the following to the attention and careful perusal of our readers. It is characterized by a degree of plain, practical good sense, which is, unfortunately, generally too scarce an article in the writings of those who discuss the science of agriculture.

CHEMISTRY APPLIED TO AGRICULTURE

—DR. ANDERSON.

BY A FARMER.

The peculiarity of Dr. Anderson's style of treating questions connected with agriculture is, that he is the first and only one, of the numerous writers which have passed under our notice, who admits that he has anything to learn from practical men. This peculiarity is the more striking as it is the very antipodes of the opinions expressed by more than one of his predecessors. As remarked in a previous paper, the writers on agricultural chemistry were prepared with an answer to every question proposed to them; they knew the value of a manure, or of a hitherto untried article of food, whether for man or beast; they knew, by the aid of analysis, what a soil required to make it

fertile for sugar-cane or cabbage, potatoes or palm trees—no matter whether the soil examined might be from Demerara or Greenland. As the very reverse to such ignorant presumption—for we call it nothing else—Dr. Anderson, in his lecture delivered at Glasgow, acknowledges that he has 'questions constantly presented to him, on which he possesses no information at all.' In the present days of quacks and quackery in matters bearing on agricultural chemistry, when the agricultural world is in a state of nervous anxiety for information, bold indeed must that man be who makes such an acknowledgment. It is a more cutting reproof to those who thought they had a "solution in their laboratory to every question proposed to them" than we dared to administer. Nor does Dr. Anderson think we shall ever arrive at an answer to these "questions" by the maiden efforts of science. No; "we must depend for their solution on the mutual aid of science and practice; the two must go together."

A correspondent of the *Times* criticises this address very severely, and complains that it contains nothing new. We uphold, on the contrary, that it is entirely new, but more especially in modesty. By the way, we are at a loss to know why the *Times* should have been selected as the medium for criticising Dr. Anderson's lecture, instead of any of the numerous papers and magazines exclusively devoted to agricultural subjects.

Whether such an avowal be complimentary to Dr. Anderson or not, we confess to have derived

great pleasure from this lecture, containing, as it does, a clear summary of the views we have in this series of papers endeavored to maintain. We have, therefore, nothing to criticise or find fault with, but gladly embrace the opportunity thus afforded to gather up the scattered fragments of good sense we have met with in the course of our labors.

The object of the lecture is to explain the principles of manure; or, in other words, why they act beneficially, and how we can improve them.

When any plant is burnt, a large portion of it disappears, and the residue is called the *ash* of the plant. With regard to the first of these two portions, namely, that which disappears in the fire, or as they are commonly called, the *organic constituents*, we have a two-fold source from which they may be derived. "The plant may, and in some instances does, obtain the whole of its organic constituents from the air, but this is far from being the only source from which it obtains them; for in all soils there is found a large quantity of *organic matter*, containing the whole of the organic elements (carbon, oxygen, hydrogen, and nitrogen) in such a condition as admits of their passing into a state in which they may be assimilated by the plant." It will be observed that Dr. Anderson does not enter into a discussion on the merits of the theory proposed by Johnston, that plants extract their nourishment from the soil as *humic, erenic, apocrenic, glyic*, and *ulmic* acids, or in the form of *album* and *humus*. Nor does he discuss the opinion of Liebig, that plants are fed by the carbonic acid of the atmosphere. "Some of the facts of the case have been determined in the laboratory;" but as long as science and practice work separately, the only result has been mere speculations like the above, of which science has supplied "one set, and practice the other." Dr. Anderson has contented himself with stating the fact that the organic matter present in the soil is useful to vegetation, as proved by its removal by certain crops; how it acts is one of the matters on which we require further information.

With regard to the *ash*, or inorganic portion of the plant, Dr. Anderson states that "every fertile soil must contain all the constituents of the plants which grow upon it, and that, too," in a sufficient quantity to supply many successive crops." But the mere presence of these substances does not insure the fertility of the soil: it is necessary that the state of combination in which they exist be such as admits of their becoming readily available for the growth of the plant. In the first place,

they must be presented to it in a soluble condition. At the same time they must not be too readily soluble, or the rains would soon carry off the valuable matter. In soils, and what we may call natural manures, as the dung of animals, this risk is avoided by the arrangement that the ingredients required by the plants are, in the soil and in fresh dung, in the state of insoluble compounds, which are only rendered available to vegetation by very slow decomposition. The whole principle of agriculture, says Dr. Anderson, is to obtain by proper management, from a given surface of land, a greater amount of vegetation than it is capable of yielding in a state of nature. This is effected by two methods: the first is by tillage, which by breaking up the land and exposing it to the atmosphere, facilitates the decomposition of the insoluble matters in the soil, and renders them available to vegetation; the other method of increasing the fertility of the soil is by supplying to it those substances which the plant requires—in other words, by the use of manures.

Dr. Anderson gives as his opinion that a fertile soil must contain all that the plant requires: so a good manure, or one which is to be generally useful, must also contain "all the substances requisite to vegetation," that is, those which are present in the *ash*. In the course of these papers we have occasionally had to dispute the extravagant estimates which some writers have formed of the value of a single substance as a manure. For instance, a French chemist asserted that the value of a manure might be calculated by the amount of nitrogen it contained; others again have lauded the phosphates, and alledged that with a plentiful supply of them the plant required nothing more. Dr. Anderson's opinion, as above quoted, and in which we cordially agree, strikes at the root of such crude opinions. He arranges the ingredients of a good manure, as regards their comparative value, as follows:—first, ammonia; next, phosphoric acid; and then potash.

Those substances—as nitre, the salts of ammonia, superphosphate of lime, and some others—which are capable of supplying separately only one of these three important ingredients, can only be "advantageously used in those cases where the soil is deficient in the single ingredient they contain." As such instances are, however, very rare, the safest plan the farmer can pursue is to use those manures which contain all the substances required by vegetation. The first of these is farm-yard manure, which must always be the farmer's mainstay: everything else ought only to be

considered as an assistant to it. Farm-yard manure will always contain more or less of the ingredients present in our crops; whereas, the artificial manures, as commonly applied, will only contain one or two of them: their chief advantage being that they contain the valuable constituents in a "more concentrated form, more free from foreign and worthless ingredients, and consequently in a state in which they may be carried to the farm at less cost than the deficiency could be supplied by bringing farm-yard manure from a distance." It is these properties which constitute the chief value of artificial manures, and when they are used along with a portion of farm-yard manure, the farmer by this combination secures the best possible mixture for his crops.

Dr. Anderson acknowledges that we are as yet unable to decide as to the best method of managing farm-yard manure. By too much fermentation the risk of losing the ammonia is greatly enhanced, and by too little the inorganic matter remains insoluble, and consequently unfit for immediate use. The application of small quantities of gypsum remedies the former evil, and the latter the farmer has to some extent under his own control.

There are several other disputed points on which Dr. Anderson treats in the lecture in a very clear, intelligible manner, removing the prejudices with which some manuring substances are viewed, and correcting the artificial value some of them have obtained. Amongst others, that bones in their natural state are richer as manure than boiled bones, and much more likely to be useful than burnt bones—some practical men being disposed to estimate the latter as highly as either of the other kinds. Dr. Anderson justly considers guano to be the best of all these artificial manures, because it combines in itself, to some extent, all qualifications which have been assigned to a good manure. It contains ammonia, phosphoric acid, and potash or soda.

Such is a brief summary of the views advocated by Dr. Anderson; and however they may have suffered in our hands, in the lecture they are explained with clearness and delivered with modesty.

London Farmer's Magazine.

A SINGLE WEED may draw out the nourishment that would have given fulness to half a dozen ears. To be free from taxes, is far less important than to be free from weeds.

Every one will be richly repaid by a perusal of the following highly interesting

SPEECH OF THE HON. EDWARD EVERETT, AT LOWELL, MASS.,

On Wednesday, September 21th, 1851.

ON THE OCCASION OF THE UNION CELEBRATION OF
THE MIDDLESEX AGRICULTURAL SOCIETY, AND
THE MIDDLESEX MECHANICS' ASSOCIATION.

MR. EVERETT spoke in reply to the compliment of the presiding officer, substantially as follows:

I deem the great objects of the Society and those of the Mechanics' Association, whose members unite in this festival, of the utmost importance.—They comprehend no small part of all that has been done for the culture and civilization of man. We do not enough reflect how much we owe to the arts of the husbandman, the mechanic, and the manufacturer; how much they do for us all, every day of our lives. Strip society of all that these arts have done for it, and you reduce man at once to pastoral and savage life. You turn him out, like the wandering Arab or Tartar, to roam with his flocks and herds over arid deserts and dreary steppes; or like the aborigines of this continent, to earn a precarious living by hunting and fishing.

But although reflecting persons feel, when they consider the subject, that it is the arts and industry of the husbandman, mechanic, and manufacturer, by which man has been elevated in the social scale and brought within the reach of moral influences, we do not all realize that we have not yet gone as far as we can or ought; that, vast as the progress is which has been made in the cultivation of the useful arts of life, particularly of late years, we are still, no doubt, in the infancy of improvement; that man always must be in this respect, in a state of infancy, because there are absolutely no bounds to his possible progress. The individual man grows old, but the race does not grow old; a tide of new life is for ever pouring in; fresh minds start into being, adding to their native powers all the advantage of the teachings of their predecessors; and thus keeping the race (where no causes of degeneracy exist) always young, vigorous, and progressive.

It has ever been a favorite idea of mine, sir, that we live on the verge of new improvements and discoveries equal to any yet made; that in the earth we tread, the air we breathe, the water we drink, and the substances of all kinds—mineral, vegetable, and animal—which we daily handle, there are the materials and elements of new dis-

coveries, which, when made, will astonish the world. Yes, sir, the quarry and the forest—the soil and the air—the streams and the winds, are full of elementary principles and hidden arts, and unseen adaptations to human comfort: they are replete, bursting, I might say, with great truths. The intelligent artisan—I appeal to the worthy President of the Mechanics' Association, if he has not experienced the emotion—the intelligent artisan can almost hear them address him, like the imprisoned genius in the Eastern tale, imploring him to touch the spring—to speak the magic word—which shall call them into being.

I would apply these remarks to the husbandman, as well as to the mechanician, although as you told us, sir, in your instructive discourse, from the earliest records of our race, the calling of the husbandman is coeval with man; and although the farmers as a class are said to be rather disposed to adhere to old ways. Yet, sir, I have no doubt that in the several departments of husbandry, in what relates to climate, soils, manures, animals, implements, seeds, roots, grains and grasses, vast improvements are yet to be made; improvements equal to what has been witnessed in any other branch of industry.

You will be surprised perhaps, sir, to hear me express the opinion that any improvement can be effected in reference to *climate*; that being a thing outside, beyond, above us, which we must take as kind Providence pleases to send it. But much can be done, sir, to modify the influence of climate. In the neighborhood of large towns, (and the railways are constantly enlarging this neighborhood,) a very great business is carried on in the way of raising fine fruit—particularly grapes and flowers under glass. I am afraid to repeat the estimates I have heard on this subject. It is a growing business: and by the use of hot air, hot water and steam, it will be carried a good deal farther. I have not the least doubt that fuel enough is burned *to waste* annually, in every farmer's house in Middlesex county, to heat a conservatory, which, with careful culture, would furnish grapes in a single year enough to pay the outlay of the building.

Sir, the great subject of shelter (which is the question of climate in another shape) has not been enough considered. Whenever you cut down a large piece of woodland, you change the climate of the tract of land which was shielded by it from the prevailing winds. When you clothe the summit of a hill with a thriving plantation, you make a milder climate for the slope which is thus shel-

tered. I have seen tender shrubs killed by removing a building which protected them from the northeast; and every one knows that delicate fruits rarely fail to ripen in a thickly built city, which are very uncertain in the country. In short, sir, if any one doubts the extent to which climate consists in shelter, let him remark the difference between the north and the south side of a high compact wall, when the snow is going off in the spring. You will have a little glacier one side of the wall and dandelions in blossom the other.

I saw the other day at Nahant a very striking illustration of the effect of shelter in producing a change of climate. On the highest part of that peninsula, a spot over which the northwest wind in winter comes charged with needles' points and razors' edges, and where, in the spring, the east wind distils from his dripping wings a chilly dampness that carries a raw feeling to your very bones; I say, sir, on this spot, and on the northern slope of it, the perseverance and skill of an intelligent gentleman has created an entirely new climate.—He has clothed the most elevated portion of the promontory with trees for shade. His cottage is hidden in a grove of his own planting, and that commenced, I think, less than twenty years ago. On the northwest slope of his grounds he has a garden filled with the choicest fruits of the season: not raised under glass, but in the open air, and on standard trees. I saw the most beautiful pears I have seen this season, with peaches, plums and apples. Well, sir, this, as I said, has not been effected by glass, by furnaces, or by hot walls; but by shelter, and not much of that. Rough bats of wood, higher or lower, as required, some of them twelve or fifteen, others twenty or twenty-five feet high, nailed up an inch or two apart: these have produced the mighty effect and produced the climate of Provence on the cliffs of Nahant. A solid fence would not stand the mighty power of a northwester on this exposed spot: the thin slats a few inches apart stand very well, and seem to answer as effectually.

Well, my friends, you will be ready to exclaim, "Oh, yes, this is a single case—a very special instance in which, by a great outlay of money, a desired result has been produced on a small scale." I have no doubt Mr. Frederick Tudor (I trust he will pardon me for making free with his name) has expended a good deal of money on his house and grounds at Nahant, but it did not strike me that the fence of slats—the main instrument of effecting the change of climate—could have cost a great deal. I think any farmer who lives near a saw-

mill could, for five dollars, buy shats enough to do all that has been done by Mr. Tudor in this respect.

And now, sir, having alluded to this gentleman's operations at Nahant, and the expense bestowed upon them, I will observe that they furnish another striking illustration of what has been done in the way of improvement, by intelligence and perseverance, in our own day and neighborhood. The gold expended by this gentleman at Nahant, whether it is little or much, was originally derived, not from California, but from the ice of our own Fresh Pond. It is all Middlesex gold, every pennyweight of it. The sparkling surface of our beautiful ponds, restored by the kindly hand of nature as often as it is removed, has yielded and will continue to yield, ages after the wet diggings and the dry diggings of the Sacramento and the Feather rivers are exhausted, a perpetual reward to the industry bestowed upon them. The sallow genius of the mine creates but once; when rifled by man, the glittering prize is gone for ever. Not so, sir, with our pure crystal lakes. Them, with each returning winter, the austere but healthful spirit of the North,

— "with mace petrific, cold and dry,
As with a trident smiles and fixes firm
As Delos floating once."

This is a branch of Middlesex industry that we have a right to be proud of. I do not think we have yet done justice to it, and I look upon Mr. Tudor, the first person, I believe, who took up the business on a large scale, as a great public benefactor. He has carried comfort in its most inoffensive and salutary form, not only to the dairies and tables of our own community, but to those of other regions throughout the tropics; yes, sir, to the farthest East. If merit and benefits conferred gave power, it might be said of him with more truth than of any prince or ruler living,

"Super et Garamantas et Indos
Proferet imperium."

I think, my friends, you will not be sorry, in reference to this product of our own Middlesex, to hear a little anecdote of what once happened to myself. When I had the honor to represent this country at London, I was a little struck one day, at the royal drawing room, to see the President of the Board of Control (the board charged with the supervision of the government of India) approach-

ing me with a stranger, at that time much talked of in London—the Babu Dwarkanauth Tagore.— This person, who is not now living, was a Hindoo of great wealth, liberality, and intelligence. He was dressed with oriental magnificence. He had a rich cashmere shawl, held together with a large diamond brooch, on his head, by way of turban; and his cashmere round his body; his countenance and manners those of a highly intelligent and remarkable person, as he was. After the ceremony of introduction was over, he said he wished to make his acknowledgements to me, as the American Minister, for the benefits which my countrymen had conferred on his countrymen. I did not at first know what he referred to; I thought he might have in view the mission-schools, knowing as I did, that he himself had done a great deal for education. He immediately said that he referred to the cargoes of ice sent from America to India, conducing not only to comfort but health; adding that numerous lives were saved every year by applying lumps of American ice to the head of the patient, in case of high fever. He asked me if I knew from what part of America it came.— Well, sir, it gave me great pleasure to tell him that I lived, when at home, within a very short distance of the spot from which it was brought. It was a most agreeable circumstance to hear, in this authentic way, that the sagacity and enterprise of my friend and neighbor had converted the pure water of our lakes into the means not only of promoting health, but saving life at the antipodes. I must say I almost envied Mr. Tudor the satisfaction which he could not but feel, in reflecting that he had been able to stretch out an arm of benevolence from the other side of the globe, by which he was every year raising up his fellowmen from the verge of the grave. How few of all the foreigners who have entered India, from the time of Sesostris or Alexander the Great to the present time, can say as much! Others, at best, have gone to govern—too often to plunder and to slay. Our countryman has gone there not to destroy life, but to save it; to benefit them first, while he reaps a well-earned harvest himself.

And thus having got you, my friends, to the banks of the Ganges, in my rambling discourse, I am going to bring you here to Middlesex—to Lowell itself—by a short cut, and furnish you at the same time another illustration of the progress of the arts you cultivate, and of that connection between the husbandman and the manufacturer which was so ably set forth by the orator of the day. You are all aware that great quantities of

coarse cotton used to be brought thirty years ago from India. It was an important branch of commerce: the advertising columns in our newspapers were filled with long lists of hard Hindoo names of goods now seldom heard of. Of the younger portion of the company, few, I suppose, have ever seen a piece of this India cotton, such as was formerly imported in great quantities. I will presently show you a specimen of it, bought and worn by me forty-four years ago; but I must first tell you on what occasion, and for what purpose.

In the month of February, 1807, I was sent for a few months to the academy at Exeter. There was at that time among the pupils of the academy a militia company, of which all the boys who were emulous of serving their country in arms as well as arts were members. I joined it, sir, and was tolerably successful as a soldier. I did not get to be a commission or even a warrant officer; but I rose in due time to be a right-hand man, or rather boy, of the rear rank of the fourth section, which, for a red-haired urchin under thirteen years of age, and standing four feet six in his shoes, was thought to be doing famously. Well, sir, our corps had a uniform, and that uniform was a jacket and overalls of plain white India cotton. It was intended, I suppose, by this pacific garb, to tame down the terrors of our array; to smooth, in some degree, the wrinkled front of grim-visaged war; and to show that, even while preparing for its dire summons, we were still willing to put on the vestments of white-robed peace. At any rate, sir, we wore white jackets and trousers; and here is my jacket, which has, by I know not what domestic chance, been preserved. [It was held up by Mr. Everett, greatly to the amusement of the company.]

Here it is, sir, an authentic specimen of the India cotton once brought in great abundance to this country. The name of such a piece of goods is unknown to me; whether it is from the piece of Baftas, or Saunabs, or Beerboom Gurrabs, or Mow Mahmoodies, or Gutchpoor mammicollies, I pretend not to say. I can only say that they used to come by the ship load, and specie by the ship load went to pay for them. It is, as you see, sir, coarse as a hop-sack; you could almost shoot peas between the threads. If you ever wove a piece of cloth like that at Lowell, you would think it dear at five cents per yard; and yet I assure you that, to the best of my recollection, this very piece cost at retail, when it was bought in the country forty-four years ago, twenty-five cents per yard!

Now, sir, compare the cloth of which this poor

little jacket is made with the cottons furnished at a third of the price, at the present day, by the manufacturers of Middlesex, and see the progress of the useful arts. Then remember that the cottons of India were to be paid for in specie, the least advantageous form of trade; and that the cottons of this country are manufactured from a material which grows on the soil of the United States, and is woven in your own looms by those who eat bread raised by your own husbandmen. Recollect all this, and you will, I think, understand a little better what Middlesex manufacturers have done for Middlesex husbandmen; and what both, while they sustain each other, have done for the rest of the community.

THE following, which we clip from an exchange may be of use at this season:

The London Medical Gazette gives the result of numerous experiments with roasted coffee, proving that it is the most powerful means, not only of rendering animal and vegetable effluvia innocuous, but of actually destroying them. A room in which meat in an advanced degree of decomposition had been kept for some time was instantly deprived of all smell, on an open coffee roaster being carried through it containing a pound of coffee newly roasted. In another room exposed to effluvia, occasioned by the clearing out of a cess-pool, so that sulphureted hydrogen and ammonia in great quantities could be chemically detected, the stench was completely removed within half a minute, on the employment of three ounces of fresh roasted coffee; whilst the other parts of the house were permanently cleared of the same smell by being simply traversed with the coffee roaster, although the cleansing of the cess-pool continued several hours after. The best mode of using the coffee as a disinfectant is to dry the raw bean, pound it in a mortar, and then roast the powder on a moderately heated iron plate until it assumes a dark brown tint, when it is fit for use. Then sprinkle it in sinks or cess-pools, or lay it on a plate in the room which you wish to have purified. Coffee acid or coffee oil acts more readily in minute quantities.

SUSPENDING.—The roots of wheat have been traced four feet. Farmers usually plow four inches. Well, let the other three feet eight inches of root take care of itself! A man must be in small business to be fussing over a place for wheat roots to run! The fact is, they have no business to run so far.

From the Transactions of the Nottoway Farmers' Club.

STACKING WHEAT STRAW—LIGHT BREAD-RAISER.

MR. EDITOR: In discharge of my annual obligation, to submit an essay or result of some experiment, I remark that on a former similar occasion, I presented most of the experiments which had been tried on my plantation.

When threshing my wheat last, I made a very simple preparation to receive the straw, which I think was advantageous in many particulars. On one side was formed such a shelter as is usual for cows, when made of rails, inclined at an angle of about 45 degrees, except that the posts upholding it were more firmly planted, and the inclined poles were placed about one foot apart, and notched into the cross pole on which they rested. On the opposite side, leaving a space on the ground about 8 feet wide, a similar structure was erected. Between the two the straw was stacked, length and height according to necessity. The advantages are, that a fine shelter is formed for stock, with food accessible at all times, and protected from the weather and from wasteful depredation.

I will also report in behalf of my wife, (and for the benefit of wives, and consequently husbands, in promoting good humor at breakfast) the result of an experiment with a light-bread raiser, made after the directions of Dr. Thomas Booker—so simple that a common hand can easily construct one. A box is first made about one foot square—then another in which this is placed—leaving a space of about four inches between, all around which is closely packed with powdered charcoal; a top is closely fitted in the hole on top; then a top piece, made like the sides, stuffed with charcoal, is put on the top; 4 pounds of iron are placed in a pan at the bottom, heated a little beyond endurance by the hand. The vessel containing bread is then put on it, the box closed and suffered to remain till morning. There has never been a failure. On one occasion, when it was desirable to make up more than the box contained, that which was placed in the box succeeded, while the balance managed in the ordinary way, failed.

I will add, in reference to my water run, that tho' it has been frequently out of order, still it was not ascribable to any defect in the principle. Experience and attention are necessary. With their exercise, I see no reason to apprehend a failure, where incidental circumstances are favorable. Mine is now performing well, and I see no reason to doubt its continuance.—*The Southern Farmer.*

HOW TO KEEP HARNESS.

IN answer to an inquiry for information as to the best mode of cleaning and oiling harness, &c., we re-publish the substance of an article given in the Rural New Yorker:

Observing the good condition and fine appearance of the harness of Ald. Baker, proprietor of the most extensive livery establishments in Rochester, we requested him to impart to us, for publication, the *modus operandi* by which so desirable an object was achieved. In compliance therewith, he stated the course adopted as the best and most economical, after twenty years' experience in a business which required considerable attention to tackling apparatus. His process of oiling and washing harness is substantially as follows:

Take neat's foot oil and ivory or patent black—the latter well pulverized, or to be made so before using. Mix thoroughly, adding the black until the oil is well colored or quite black. In cool weather the oil should be warmed somewhat before mixing. With a sponge apply a light coat of the mixture—only what the leather will readily absorb, unless the harness is very dry, in which case a heavier coating may be necessary. After the harness is dry—which will be in from two hours to half or a whole day, depending upon the weather and previous condition of the leather—wash thoroughly with soap suds.—In making the suds use good castile soap and cold rain water. Warm water should never be used on harness leather. Apply the suds with a sponge.—Rub off with buckskin. This will give your harness a nice, glossy surface, and the leather will retain a good color and continue pliable for months. If it becomes solid with mud or sweat, an application of soap and water as above directed (without oiling) will be sufficient to give it a bright appearance.

Two applications of this oil and black mixture a year, (or once every six months) will be sufficient to keep harness, as ordinarily used, in good order. It may be necessary for livery men and others, who use harness constantly, to apply the oil oftener—but in most cases, two oilings a year and washing with suds when soiled, will keep a harness in good trim for sight and service. This process will pay a large dividend in extra service and durability—to say nothing of improved appearance.

Ald. B. assures us that the same, or a very similar application, is just the thing for carriage tops which are made of top-leather. The only difference in treatment is, that less oil should be used, or rather a lighter coating applied—and it should be washed off before drying in—top leather being thin and much more penetrable than harness. Of course this mixture would not answer for enamelled leather, of which some carriage tops are constructed.

From the Southern Planter.

From the address of Hon. M. P. Wilder, at the late meeting of the American Pomological Society, we take the following remarks :

There is but one other topic to which I will advert : the preservation and ripening of fruit.

Much progress has been made in this art within a few years, and important results have been attained. The principle has been settled that the ripening process can be controlled. Autumnal fruits have been kept and exhibited the succeeding spring. We have seen the Seckel, Bartlett, and Louise Bonne de Jersey pears, in perfection in January, and even later. The maturity of fruits depends on saccharine fermentation. This is followed by other fermentations, as the vinous and acetous. To prevent these, and preserve fruit in all its beauty, freshness and flavor, the temperature must be uniform, and kept below the degree at which the fermentation or the ripening process commences, especially summer pears.—A summer pear ripened on the tree is generally inferior. In respect to the latter, Mr. Barry, editor of the Horticulturist, has so aptly expressed my own sentiments, that I use his language :

"The process of ripening on the tree, which is the natural one, seems to act upon the fruit for the benefit of the seed, as it tends to the formation of woody fibre and farina. When the fruit is removed from the tree at the very commencement of ripening, and placed in a still atmosphere, the natural process seems to be counteracted, and sugar and juice are elaborated, instead of fibre and farina. Thus, pears which become mealy and rot at the core when left on the tree to ripen, become juicy, melting and delicious when ripened in the house."

Various fruit houses have been built both in this country and in Europe, and experience shows that their object can be attained only by a perfect control of the temperature, moisture and light. Hence, they must be cool, with non-conducting walls, or with exterior and interior walls, or a room within a room. Thus the external atmosphere, which either starts the saccharine fermentation or conveys the agents which produce it, can be admitted or excluded at pleasure. It is possible, however, to preserve the temperature at so low a degree and for so long a time as to destroy, especially with some varieties of the pear, the vitality, and therefore all power over to resume the ripening process. Experience proves that for the common varieties of the apple and pear about 40 degrees of Fahrenheit is the temperature best suited to hold this process in equilibrium.

The proper maturing of fruit thus preserved demands skill and science. Different varieties require different degrees of moisture and heat, according to

the firmness of the skin, the texture of the flesh, and the natural activity of the juices. Thus, some varieties of the pear will ripen at a low temperature and in a comparatively dry atmosphere, while others, as the Easter Beurre, are improved by a warm and humid air.

Some varieties of the pear, ripening with difficulty, and formerly esteemed only second rate, are now pronounced of excellent quality, because the art of maturing them is better understood.

But so many experiments have been tried, or are in progress, and so much has been written on this branch of our subject, that I need not enlarge except to say that the art of preserving and ripening fruit in perfection involves so much scientific knowledge as to require great attention and care; and, until its laws are more fully developed, must be attended with considerable difficulty. I therefore commend it to your special attention, as second in importance only to the raising of new varieties.

BEST MODE OF RAISING WOOD.

READING an article in the Farmer of March 8th, on the "growing of wood," it struck me at once that many did not know how to produce nut-trees from the seed. Now a few hints would set every one aright. I have tried a good many years to raise oaks, chestnuts and other kinds of trees, but met with no success, planting them as I did in drills, in common soil. Not one would sprout. In the summer of 1853, I noticed several sprouts as I was working under a chestnut tree, and in digging down through the leaves I came to the nuts from which the sprouts came. I took the hint, and the next fall I procured a quantity of nuts; thinking I would imitate nature, I prepared a rich bed, strewing the nuts thickly *on top of the soil*, covering them with leaves. All the nuts came up and are now doing finely. This manner of planting is to be observed only for those trees that are designed for transplanting. For wood lots I would recommend the following mode of planting: Select a still day. Let one man drop the seed eight feet apart each way, covering them with a small handful of leaves. Let another man follow with a barrow of heavy soil, sprinkling on *just enough to keep the leaves from blowing away*. Two men in this manner can plant one acre in one day with ease.

If these facts are followed, it will save much labor in the production of wood land. Hoping they will be the means of doing much good.

I remain your ob't. servant,
W. HOWARD.

East Orrington, 1855.

MUSTY GRAIN is made sweet by putting it in boiling water, (double the quantity of grain,) letting it cool in the water, and then dry it well. Skim the water.

From the "Southern Times."

METEOROLOGY FOR THE FARMERS.

LIEUTENANT MAURY'S NEW ENTERPRISE.

LIEUT. MAURY has presented to the Farmers of the United States, through the columns of the *American Farmer*, the outline of a plan for a general system of meteorological observations on land. The high reputation of this gentleman; his eminent services not only to physical science, but to the commercial interests of the country; his practical sense and trustworthy judgment, cannot fail to secure attention to his suggestions.

The plan is simple. It proposes that the farmers and planters should co-operate all over the country in a regular and systematic method of meteorological observations. The information so collected as to the winds, rain and similar phenomena is to be forwarded to Washington, and measures are to be adopted to enlist the agency of the Government in arranging the facts for publication. There can be no doubt that the Government will lend its aid to the furtherance of this great work. Lieut. MAURY states that such an office as will be required in Washington to carry out the details of this plan is already in existence. It was established by Mr. CALHOUN when he was Secretary of War, and it is under the control of the Surgeon General of the army. The meteorological observations that are made at our military posts are discussed and published at this office; and "one of the most valuable and interesting reports concerning the meteorology and climates of the country that have ever appeared is now in course of publication there."

The plan, it will be perceived, is similar to the one which has been so successfully adopted on the sea. By the observations which have been made on the ocean a vast mass of most important and valuable information has been collected. The results of these extended observations have been embodied in the "Wind and Current Charts," which have proved of such immense service to navigation. Other nations, following the scientific lead of Lieut. Maury, have united in this useful work, so that now the ocean is literally covered with "floating observatories," and "every ship that sails is converted into a temple of science." It has been estimated that millions of dollars have already been saved to commerce by the "Wind and Current Charts." The farmers and planters of the country have been likewise benefitted; for not only have ships been enabled to make quicker voyages and at lower rates, but new markets, that were before practically inaccessible by reason of length of time, have been brought within easy reach by the increased facilities of transportation.

If this system of close and accurate observation of the facts of meteorology, in all its relations to

agriculture, health, and similar matters, is adopted on land, it must result in great benefit to our country. As Lieut. Maury justly remarks, there are "mighty harvests of many sorts" in these meteorological fields, and we have no doubt whatever that if the proper spirit of research is applied, we shall have a new era in our knowledge of the wonders of the atmosphere and its connexion with industry, health and life. We beg the attention of our farmers and planters to this movement. It deserves the largest and most liberal sympathy. It is fraught with invaluable advantages to every domestic interest of the country. Our agricultural associations ought to take up the subject immediately, and prepare memorials to Congress for the slight aid that might be needed to get it under way.

We publish below a letter to us from Lieut Maury on this subject. Though not written for the public eye, we have taken the liberty, in view of the important matter discussed, to lay it before our readers, hoping that its vigorous thought and philanthropic spirit may induce general attention to the views advanced:—

CHARLOTTESVILLE, (VA.) AUG. 23, 1855.

MY DEAR SIR: I am in want of a champion in Alabama for a good cause, and therefore address myself to you without further apology.

My investigations of the winds at sea have impressed me with the idea that as much may be done for agricultural and sanitary meteorology as has been done for that of the sea. I have so stated publicly, and given the details of the plan in the August number of the *American Farmer*, an agricultural paper published in Baltimore. I will send you a copy of it if I can procure one. The plan is simply that the farmers and planters should lend that sort of co-operation on the land that the merchants and sailors have afforded at sea, and that the Government should then do its part by having the observations thus procured discussed and published.

There are truth-loving, knowledge-seeking men in every county in every State who would be glad to co-operate in such a work. They would readily undertake to make the requisite observations if they were furnished with the formula and had the assurance that their observations would be discussed and published for the benefit of all. Nay, there are un-reduced observations enough now in the country, lying in the desks of those who made them, from which as much useful information may be gathered for the farmers as was culled from the old sea-logs for the sailors; and I have no doubt that the desks and drawers of meteorological observers on the land would open quite as readily to the call of an authorized co-laborer as the old sea chests of the mariner did. As for giving the scheme a trial and car-

rying it into a demonstration far enough to show what a systematic plan of observations will do for the advancement of agricultural meteorology and for the benefit of farmers and planters, I'll answer for the observations if Government will pledge the means for their discussion and publication, I'll go further, and promise that the observations shall be furnished to the Government for such a purpose *without cost*. You know the materials for the "Wind and Current Charts" were all furnished gratuitously, and that, without asking Governments for a single cent, we have literally covered the ocean with floating observatories and converted every ship that sails into a temple of science. Not only Government, but nations and people have united with me, and are assisting to carry out a system of meteorological research for the sea. As much may be done for the land if the planters and farmers of the United States will only second the effort, and tell their Representatives in Congress that they want as much done by the Government for agricultural and sanitary meteorology as it has *permitted* to be done at sea for the benefit of commerce and navigation.—By the saving of time on the voyage and the lessening of the dangers by the way, these interests, it has been computed both in this country and England, have been benefitted to the extent of millions annually. Some of these benefits have inured also to agriculture, not only by giving an opportunity to the farmer to get markets beyond the sea cheaper, and enabling ships to fetch and carry for him at lower figures, but by bringing within reach markets which before were inaccessible by reason of the great length in time of the voyage.

Let us, therefore, extend this system of philosophical research to the land. It is very rich with promises of good; it will cost literally *almost* nothing; and will not the planters of Alabama, as well as the agriculturists and agricultural societies of the other States, lend me a hand in "getting it under way?" Help me with good will and kind words. * * *

Yours, truly, M. F. MAURY.
Rev. Dr. LIPSCOMB.

AGRICULTURE.

Prize of the arts, spring of domestic ease,
Pride of the earth, and patron of the seas!
Kind Agriculture, give thy potent aid
To spread thy fields where gloomy forests shade:
"Where savage men pursue their savage prey,
Let the white flocks in verdant pasture play;"
"From the bloom'd orchard and the showing vale,
Give the rich fragrance to the gentle gale;"
Reward with constant boon the laborer's hand,
And shed thy clustering bounties o'er our land.
Westchester's sons spurn not your rocky toil:
Your country's glory is a cultured soil.

MOREPANIA.

GRAINS.

GENERAL REMARKS.

THE compounds in vegetables really nutritive, are very few; *farina*, or the pure matter of starch, gluten, sugar, vegetable jelly, oil and extract. Of these the most nutritive is gluten, which approaches nearest in its nature to animal matter, and which is the substance that gives to wheat its superiority over every other grain.

There is a particular period at which each species of seed ought to be sown, in order to bring the plants to a perfect state of ripeness.

The condition of the land is, in fact, the best guide; for, if it be in a mellow state, between dough and moisture, the seed may be put in with confidence. Some kinds, however, prefer a dry and warm soil; others, that which is more humid and tenacious.—Thus, barley, rye, and buckwheat, succeed best on the former; and wheat and oats on the latter.

The depth at which seed should be sown is a matter of nicety, as well as of importance. If too deeply buried, germination is impeded, and may be altogether prevented; while, if sown too shallow, insufficient moisture is not left in the surface to afford nourishment to the roots of the plants.

The depth at which seed ought to be placed must, therefore, be regulated by the nature of the soil. If stiff, more moderate covering should be used than if light and porous; wheat, barley, and oats also require more than rye or buckwheat; but, except in a few instances, from one and a half to three inches, is in every case, the lowest to which it should be carried.

Seed should be selected from the earliest and most perfect growth of the preceding year. Too much attention cannot be bestowed on this part of the operation, as every kind of seed will produce its like. Late sowing requires one-third more grain to the acre, than if sown in early. Land, naturally very rich and too highly manured, is apt to cause during the hot season of summer a too rapid growth of the straw; at the expense of the seed.

WHEAT.

The *white* are superior in the quality of their produce; the *red* are the more hardy; and in general, the thin and smooth-chaffed are preferred to the woolly and thick chaffed.

The produce of wheat sown in spring acquires the habit of coming much sooner to maturity, than the produce of that sown in autumn. Hence the farmer, when he sows wheat in spring, should sow the produce of that which has been already sown in spring, and not the produce of that which had been sown in autumn.

This change in the habit of ripening, though it may at first view appear somewhat singular, takes

place in all the cereal grasses, and also in many other cultivated plants. The minor varieties of any species of wheat, under given conditions, will remain unchanged for an indefinite period; under other circumstances, however, they degenerate—and hence, particular kinds that were once valued, have now ceased to be so.

The soils of the lighter class are the best suited to wheat; and it is an error in practice to force the production of wheat on soils, and under circumstances which are better suited to the production of the other grains.

No wheat, however clean or beautiful, should be sown without being soaked 12 hours in a pickle of strong ley, brine strong enough to float an egg, or lime water, and after being drained, should be rolled in powdered lime.

As the wheat crop generally receives no after-culture, the soil should be brought into as fine condition as possible. Manuring and thorough culture are indispensable.

If it be desirable to sow wheat after a fallow crop of rye, oats, &c., the land should be immediately ploughed or thoroughly harrowed after it is cleared—then one good ploughing with sufficient harrowing is a good preparation for the seed.

As a large crop cannot be sowed in a few days, it is better to begin a fortnight too early than a week too late.

Two bushels of seed (sometimes) to the acre of winter wheat, is not too much: less than four or five pecks should never be sown.

By sowing too thin, the growth of weeds is encouraged to the great detriment of the growing crop and the loss of the owner.

Ploughing in wheat is best, especially on worn land. The depth at which the seed is buried is more regular, and gives the young plants a stronger hold on the soil.

CORN.

As a general rule it may be laid down that any crop which matures so large a quantity of seed, must exhaust the fertility of a soil much more than a crop which does not produce seed, such as the root crops.

There is probably no other crop that produces so much nourishment for man and beast as this does. It was the opinion of "Arator," that it was "meal, meadow, and manure." And the manure which might be made from the fodder that is produced, if returned again to the soil from which it was taken, would keep it in a constant state of fertility, and in fact increase it from year to year.

To Plant, plough well in the fall and early in the spring. Manure and harrow well. Select from the best stalks large sound ears—throw out the small, C-shaped grains from each ear. Soak in strong

liquid of rich manure 12 hours. Put four grains in hills four feet apart each way. Cover one and a half inches deep, and press down with foot or hoe. Apply leached ashes or plaster, after the corn is up.—Use the cultivator instead of the plow, which cuts the roots and makes them bleed—besides, all that is now needed is to keep the ground loose, well pulverized and free from weeds.

The ravages of the wire-worm may be stopped by slacked stone lime.

Of all the grains, corn is the most valuable, taking into view quality and price. Soaking the seed in a solution of saltpetre keeps off the worm and largely increases the crop.

Topping the stalks diminishes the grain from 6 to 8 bushels per acre, without a corresponding increase of fodder.

Grind corn in the ear for feeding. Pure corn meal does not appear sufficiently to distend the stomach to bring into exercise its digestive faculties fully, without taking so much as to clog and impair its functions eventually. For this reason, a mixture of less nutritive materials is desirable; and one of our most successful feeders of pork has assured us, that he always mixed oats with his corn, in the proportion of one-fourth, previous to grinding, and thinks he should find a profit in exchanging corn for oats, bushel for bushel, rather than feed the former to his pigs clear. The cob, possessing nutriment in itself, makes about the requisite mixture with the grain, and hence is of great value for the purpose of feeding.

In any district where Indian corn is extensively grown, a miller would find it for his interest to attach a cob-cracker to his machinery, as the farmers would find themselves well repaid by the great saving and superiority of the meal so made, for feeding.

THE PLOUGH.—By so placing the coulter as to form an acute angle with the plane of the share, on the land side, the beam is brought more directly over the centre of the plough, as is the case with Prott & Mears' improved plough, and thereby the power necessary to move it, is applied more directly to the centre of resistance, and the force required to move it, and overcome this resistance, is of course less than when applied, as in other ploughs, on one side.

The difference in the force required for ploughs now in use, has been ascertained to be 100 per cent.; showing the great importance of its structure. The work which one team of horses or one yoke of oxen can perform at one plough, will require two yoke at another!

THIRTY-FOLD.—The Western (N. C.) Eagle says that Mr. William Ray, of Yancy county, sowed nine bushels wheat this year, from which he harvested 271 bushels of clean wheat—thirty bushels from one

FROM THE ADDRESS OF NICHOLAS BIDDLE,
ESQ., BEFORE THE PHILADELPHIA AGRICULTURAL SOCIETY. OCT. 1840.

BESIDES lime and other enriching substances, the cost of the mere animal manures applied to the soil of England, amounts to three hundred millions of dollars; being more than the value of the whole of its foreign commerce. Yet the grateful soil yields back with interest all that is thus lavished upon it. And so it would do here, if we would only trust the earth with any portion of our capital. But this we rarely do. A farmer who has made any money spends it not in his business, but in some other occupation. He buys more land when he ought to buy more manure; or he puts out his money in some joint stock company, to convert sunshine into moonshine—or he buys shares in some gold or lead mine. Rely upon it, our richest mine is the barn-yard, and that whatever temptation stocks or shares may offer, the best investment for a farmer is *live stock and plough-shares*.

* * * * *

No soil can withstand a succession of grain crops; and instead of letting it lie fallow in order to recruit from its exhaustion, as was the old plan, the better practice now is to plant in the same field a crop of roots. These draw their nourishment from a lower region than the grain crops do; they derive a great part of their food from the atmosphere, by their large leaves, which at the same time shelter the soil from the extreme heats; they provide a fresh and juicy food for cattle during the winter, thus enabling us to keep a large stock, which, in addition to the profit on them, furnish abundant manure with which to return to the grain crops. Now this should be our effort—more roots—more cattle—more manure—then more grain.

* * * * *

All these improvements which may adorn or benefit our farms, are recommended to us not only by our own individual interests, but by the higher sentiment of our duty to the country. This is essentially a nation of farmers. No where else is so large a portion of the community engaged in farming;—no where else are the cultivators of the earth more independent or so powerful. One would think that in Europe the great business of life was to put each other to death: for so large a proportion of men are drawn from the walks of productive industry and trained to no other occupation except to shoot foreigners *always*, and their own countrymen *occasionally*; while here, the whole energy of all the nation is directed with intense force upon peaceful labor. A strange spectacle this, of one, and one only, unarmed nation on the face of the earth! There is abroad a wild struggle between existing authorities

and popular pretensions, and our own example is the common theme of applause or denunciation. It is the more important then for the farmers of this country to be true to their own principles. The soil is theirs—the government is theirs—and on them depends mainly the continuance of their system.—That system is that enlightened opinion, and the domestic ties are more stable guarantees of social tranquility than mere force, and that the government of the plough is safer, and, when there is need, stronger than the government of the sword.

WHAT GIVES VALUE TO THE LAND OF ENGLAND?

SUCH is the question asked by an intelligent correspondent in one of the late English Journals; and as most of our readers are land owners, and therefore directly interested in understanding what it is that gives value to land, we think we cannot do better than lay before them the answer that is given to the question:—

“Why, I ask again, is the price of land high in England generally? Why, evidently, not because the land itself is better than in other countries, but *because a ready market for all sorts of produce is within reach*, by means of roads, canals, railroads; that labor is cheap and abundant; that life, and property are secure; that we have close at hand the means of grace, and education, and improvement; in short, that circumstances are favorable for such a life as shall be convenient and desirable here below, and shall prepare us for eternity hereafter. Thus the same land may be almost worthless or very valuable, according as it is well or ill provided with these things.”

By some of our readers it may be said that there is here one requisite that cannot be obtained by them—that labor cannot in this country be “cheap and abundant.” Directly the reverse is the fact. High-priced labor is cheap labor, while low-priced labor is dear labor. The Hindoo who works for a dollar a month, out of which he finds himself, cannot compete with the well-fed laborer of Alabama, nor the well-fed, well-clothed and well educated workman of Lowell. It is when the labor is largely productive that the laborer is well paid; and high as may be his wages, his labor is cheap by comparison with the unproductive labor of other countries. It is, too, when labor is largely productive that labor is abundant, because to render it thus productive it must be aided by machinery; and we know well that a single steam-engine will do more work than a hundred or even five hundred men. The reaping machine enables one man to do the work of ten; and the threshing machine and the grist-mill dispense with labor, the performance of which, would require ar-

mies for its execution. With each such machine labor power becomes more abundant, labor becomes more productive, and land becomes more valuable. An acre of flax land in Belgium commands as much rent as would purchase eight or ten acres of cotton land in Alabama. Why? Because the flax land has a "ready market for all sorts of produce within reach," and the cotton land has no such market.—An acre of wheat land in England rents for as much as would purchase five, six, or eight acres of as good land in Wisconsin. Why? Because the former is near market, and the latter is distant from it; and the farmer knows *and feels* that he it is that must pay the cost of going to market. THE FIRST TAX TO BE PAID BY LAND AND LABOR IS TRANSPORTATION.—How long will our farmers and planters insist upon paying the enormous amount of taxation that they impose upon themselves, by failing to make a market on the land for the products of the land? How long will they continue to exhaust their land and themselves, and deprive themselves of "the means of grace, education and improvement," that are so difficult to obtain when men are widely scattered, and so easily obtained when they are enabled to combine their efforts for obtaining them?—*Plough, Loom, & Anvil.*

GROUND AND UN-GROUND—COOKED AND UN-COOKED FOOD.—In a communication from the Society of Shakers, at Lebanon, New York, in the *Patent Office Report*, we find the following upon the relative value of ground and unground, cooked and uncooked corn for feeding and fattening cattle, &c. &c.:

"The experience of more than 30 years leads us to estimate *ground corn* at one-third higher than *un-ground* as food for cattle, and especially for fattening pork; hence it has been the practice of our society for more than a quarter of a century to grind all our provender.

"The same experience induces us to put a higher value upon cooked than upon raw meal; and for fattening animals, swine particularly, we consider 3 of cooked equal to 4 bushels of raw meal.

"Until within the last three or four years our society fattened annually for 30 years from 40,000 to 50,000 pounds of pork, exclusive of lard and offal fat; and it is the constant practice to cook the meal, for which purpose 6 or 7 potash kettles are used."

The Shakers are a close-observing, calculating people, and go in for the practical realities of life, and therefore, in the economy of food, must be presumed to be good judges. For ourselves, we are disposed to believe the conclusions to which they have arrived are correct.

HOW MANUFACTURES TEND TO INCREASE THE PRODUCTS OF AGRICULTURAL LABOR.

We invite to the following paper the attention of our agricultural readers, and beg at the same time to remind them that the consumption of iron for the preparation of machinery for the *production, conversion, or transportation of the products of the earth*, is now less by about two hundred thousand tons than it was four years since, although the population has increased in that time not less than three millions:

"I was pleased to find here a cheap Steam Engine on wheels; (four-horse, costing \$325, all appliances included,) from the manufactory of Hoard & Bradford, Watertown, Jefferson Co. I visited and spoke of their works some fifteen months since, and I learned to-day that they have been unable to fill their orders promptly at any time during the past year, owing to the continually increasing demand, although they have meantime quadrupled the number of their workmen. They make engines with boiler, &c., as low as \$75, (half-horse,) requiring about as much fuel as a parlor fire, and from that up to six-horse, (\$400.) The one here exhibited can be guided to the barn or stack to thresh out and winnow the grain, and when that is done will propel itself to the field in quest of a job of stump-pulling; thence will travel back to the house and there saw up the winter's wood about as fast as a man can hand it along, beguiling its leisure moments by pumping water for the cattle, churning, turning grind-stone, hanging the brass kettle over the kitchen fire, and rocking the cradle. Of course I speak only of the power; to apply it to all these various uses, other machinery is requisite. But I have seen enough to convince me that for all purposes where essentially stationary power will answer, steam is already cheaper for the farmer on a liberal scale than horse power, and that it is a shameful waste of human labor to cut up a pile of wood with an axe. For ploughing, transportation, and such essentially locomotive uses, I think cattle must still be employed until the time (which cannot now be many years ahead) when the steam engine shall be superseded by some agency or motive force which does not so rapidly exhaust or consume the material or elements of its power."

CABBAGES FOR COWS.—The editor of the *Agricultural Gazette*, (Eng.) estimates one acre of cabbages to be worth three acres of turnips for cows. He recommends sowing seeds in beds, either in autumn or spring, and transplanting toward the end of May, at the rate of 8,000 plants to the acre. One pound of seed will produce 2,400 plants.

IMPORTANT FACTS.

"A spot of land which, when pastured upon, will yield sufficient food for only one head, will abundantly maintain four head of cattle in the stable, if the crop be mown at a proper time and given to the cattle in proper order. The soiling yields at least three times the quantity of manure from the same number of cattle; and the best and most efficacious summer manure is made in the stable, and carried to the fields at the most proper period of its fermentation. The cattle, when used to soiling, will yield a much greater quantity of milk, and increase faster in weight while fattening than when they roam the fields, and they are less liable to accidents—do not suffer by the heat, flies or insects, and are not affected by the weather, escaping also many disorders to which cattle always abroad are liable. Each head of cattle fed in the stable, if plentifully littered, yields annually sixteen large double cart-loads of dung."

A visitor to the farm of Josiah Quincy, quoted in the Farmers' Cabinet, says:—

His farm is extensive, and surrounded by a flourishing hawthorn hedge, but there is not an interior fence on the premises; the whole presents a single field, devoted to all the various purposes of agriculture; no part of it is allotted to pasture, properly speaking, as his cattle are fed in their stalls, and are never suffered to roam over the fields: and the advantages of this system are thus given—formerly there were seven miles of interior fences to be kept in repair, but by keeping the cattle up, the whole of this expense is saved: formerly, sixty acres of this farm were devoted to pasturage, but now, a greater number of cattle by one-third, are kept on the products of twenty acres, and I never saw cattle in better condition. The saving by these means is enormous, and the immense advantages arising from it too apparent to be dwelt upon. During the summer, the cattle are fed upon grass, green oats or barley, cut the day before, and suffered to wilt in the sun, and the manure which is thus saved will more than pay for the extra expense and trouble. The farm is most highly cultivated, and every kind of grain and vegetables have a place.

Near London, it is the custom to sow large quantities of oats, to be cut green for stall-feeding the milk-cows; there are always sown on land most highly manured for the purpose, with four, and sometimes five bushels of seed per acre; the yield is prodigious, and is found to be one of the most valuable crops that can be grown, coming off the land in time for a full crop of turnips for the winter, or of late potatoes.

SUBSTITUTES.

Messrs. Editors: I know not that the drought which prevailed in this section extended to the Northern States, but whether it did or not the remarks which I shall make will apply with equal force. Every farmer should raise corn enough for his own use without buying any, and then raise other things to feed his stock, and thereby save all the corn he can. If his crop of corn should fall short, as ours has done this season, he may, with good economy and the use of other things as substitutes, get along very well without buying.

The most valuable of these substitutes, according to my experience, is a good barley lot. No person who has never raised it can form any idea of its value. I think an acre of good land, highly manured and sowed in barley, worth \$50 to any farmer. It should be sowed in this latitude as early as the first of September, and from the middle of November until the first of February, it may be grazed down occasionally: and from then until the middle of April it may be suffered to grow up and be cut down and fed to horses or other stock. There is one characteristic about it different from that of any other grain with which I am acquainted: horses may be fed on the green barley and worked every day, and it will not give them the scours as other grains do.

Rye is another profitable grain to raise for grazing and for cutting for horses in the spring, while in the milk. Horses are fond of it, and I believe it has a tendency to rid them of the bots.

It is best to sow rye in September, but it may be sown any time until the first of January. It will grow very well on land that will not grow barley; but it is not as strong food as barley, neither are horses so fond of it. Rye makes an elegant winter pasture for sheep when sown early, and they do well on it with a little dry food and salt.

Besides the two grains which I have mentioned, there are a variety of grains, roots, &c., which may be raised to great advantage, not only to winter stock on, but to feed them in summer.—Wm. C. Dickson, *Hillsgrove, Pa.*

Imports of Dry Goods.—The imports of foreign dry goods at New York for the month of August are \$3,283,840 less than for the same month of last year, and \$1,621,138 less than for August 1853. The decline from last year extends to all descriptions of goods, but has been comparatively least in silks.

A New Inna.—A Mr. Thompson, of Kansas Territory, has, it is said, just completed a prairie ship or wagon, to be propelled by wind, in which he proposes, with thirty companions, to make a voyage to the Pacific in a day, next June.

PLOUGHING.

Much time and labor is saved in ploughing long instead of short ridges. For instance, suppose the ridges are 78 yards long, four hours and thirty-nine minutes are spent in turnings, in a day's work of eight hours! whereas, if the ridges are 274 yards long, one hour and nineteen minutes are sufficient in the same length of time.

Plough deep. Let a farmer examine the extent and depth to which the roots of grain, in a loose and favorable soil, will spread, and he will cease to wonder at the failure of a crop where the subsoil has never been stirred by the plough.

Small fibrous roots of vegetation extend to a depth, where the soil is loose and deep; and where vegetables thus take root they are much less affected by drought. The soil being turned up to the action of the sun and air, becomes enlivened, and better fitted for producing vegetation. An acre of land yielding a ton of hay, at the usual season of ploughing greensward contains more than twelve tons of vegetable matter, consisting of the roots and tops of grass, and other vegetable remains upon the surface. Such a method of ploughing, then, as will be best calculated to secure for the benefit of the crop, this mass of enriching substance, the farmer should not hesitate to adopt. By completely inverting the sward, and laying it as flat and smooth as the nature of the ground will admit, and then cultivating without disturbing the sod, with the application of a dressing of compost, land may not only be kept in heart, but wonderfully improved.

ALPACA, OR PERUVIAN SHEEP.

The following extracts are from a paper presented by Capt. James Peterson, to the United States Society:

Having recently returned from Peru, and brought with me to New York, some fine specimens of the several varieties of celebrated Peruvian sheep, and having, after much difficulty, succeeded in devising means by which I am enabled to calculate on procuring from that country a sufficient stock of those valuable animals, to warrant an attempt to introduce them to the prominent notice of the agriculturists of the United States, I am desirous to call the attention of the United States Agricultural Society to the subject.

The character and habits of these animals is very similar to that of our own sheep, or perhaps an amalgamation of them and of those of the domestic goat. They are gregarious, excessively gentle, and timid to a degree. One valuable quality they possess that deserves especial attention: wherever they are driven, there they remain for hours, or for days

even without wandering more than a few yards from the spot.

An evidence of the high esteem in which these Alpacas are an addition to the domesticated animals, I may mention that in my searches in Peru to obtain them, I met an individual who is at this very time stationed upon a rancho on the border, but without the boundary of the country, where he is rearing them for the purpose of their export to Australia. And I found from him that he has made arrangements with the government of Australia for the sale of all the Alpacas that he sends there, at the rate of \$60 a head, without, however, being restricted from finding a better market for them if he can do so;—the sole object of the government being to procure the introduction of the animals into the country.

These animals are found in all parts of South America, upon the Pacific coast, from the Equator to about the twenty-fifth degree of south latitude, inhabiting principally the mountainous ranges, frequently at the height of twelve to fourteen thousand feet above the level of the sea, and in the region of continual mist and snow. It is not, however, in these intemperate regions alone that they find a congenial abode; on the contrary, they are found to prosper equally well on the middle elevations of the Andes, where in summer the clouds accumulated from the evaporations of the sea, are blown over and burst in torrents of which we can form but a faint idea. No change of temperature, appears however, to affect these interesting animals; and when to these considerations is added the circumstance, that in temper and docility they combine the intelligent vivacity of the deer tribe with the meek and confiding innocence of our own sheep, it appears impossible to conceive an animal better adapted in every point of view to form a valuable addition to our farms and homesteads. Such an animal would live and thrive where a sheep would starve.—*Practical Farmer, Indiana.*

AN EXTENSIVE FARMER.—The Norfolk (Va.) Herald says it is stated as an ascertained fact, that Mr. William Allen of Clements on James River will raise for sale this year *fifty thousand* bushels of wheat; and, without some unforeseen occurrence *five thousand* barrels of corn.

TO FATTEN FOWLS.—The best food for fattening fowls is potatoes mixed with meal. Boil the potatoes and mash them fine while they are hot and mix the meal with them just before it is presented. They fatten on this diet in less than half of the time ordinarily required to bring them to the same condition of excellence on corn, or even meal itself.

From the Wilmington Herald.
ABOUT GRAPES.

ENGLAND, we see by a recent publication, has begun seriously to meditate a reduction of duties on foreign wines, as a means of diminishing intemperance. A committee appointed by the House of Commons, has made a lengthy adverse report on the subject; first, upon the ground that the trade and revenue would be injured by it;—and secondly, because the grape disease has so decreased the supply of wine in the old world, that a low rate of duty would only tend to appreciate prices in wine producing countries there. London merchants, it is stated, are requesting information in regard to the wines of America, to be laid before Parliament; for at last our wines are talked of there, and the question is asked, "If we open our ports, and give America our wine trade, can America supply us?"

Of a kin with these introductory remarks, and with the additional one, that we are now in the grape season, is the pleasant letter of a New York wine merchant herewith appended, which, we trust, will not too rudely shock the nerves of our temperance friends. Whether this country can supply England with wine is an open question.—*Quien Sabe?* Is the experiment worth a trial?

85 CHAMBERS ST., N. Y., Aug. 30, 1855.

MY DEAR R.:—I do very much want a barrel of Scuppernon, in its pure state, and you will please tell the maker of it, that if he sends me a natural wine in the state which the Creator meant it to be used, before there was any whiskey and sugar in the world, that it will probably help to raise the State of North Carolina to a high pitch of glory. The truth is, our native wines are attracting some attention in England now, partly from two articles on American wines, published in Putnam's Magazine some time since; and I have had letters lately from London, requesting information in regard to our grapes and wine—statistics, etc., to lay before Parliament. In my letters answering the questions, I took occasion to speak very respectfully of North Carolina, at the same time admitting that they had a barbarous practice there of spoiling their wines with rum and sugar. Now, if I am not very much in error, it will not be long before we shall be shipping our wines to England, and perhaps to other places in Europe. And as your State is very productive of grapes, she should be able to furnish large quantities of wines, but those wines must have a good reputation to begin with, and must be pure.

Now, it is idle to say that wine will not keep without sugar or rum. All the Rhine wines, all the Caré wines, the Burgundies, Sauternes, and in fact, all the light wines of Europe, will make excellent vinegar in a few days if exposed to the air. But who would buy or drink *sweetened Claret*? The fact is, your wines if too light and delicate to bear exposure to the air, (and I hope they are,) have to be bottled—and I hope to see North Carolina growing cork wood trees, and blowing bottles all over its pine barrens. The receipt for making pure wine is very short. Have it well fermented—fill the cask full and bung it tight. Keep the casks *always full*. Do not let a mouthful of air get in if possible. Then it will keep—and improve. Good or bad, as it may turn out, it is *wine* and not wine grog. The second spring there always will be a second fermentation. Watch the wine and give it a chance to work a little—then the labor is over.

I am much obliged to you for your remembering me in this way, and trust to see the barrel of Scuppernon in its virgin purity. Tell the maker of it if he does not do his duty, I will leave North Carolina in its original turpentine. With much regard. Truly Yours, FRED. S. COZZENS.

BOTS IN HORSES.—This is the season to prevent that terrible disease in horses called Bots. The disease is occasioned by the horse's swallowing the nits or eggs, of the Bot-fly—an insect that lays on the fore-legs of horses. All that is required is to rub down the parts on which the fly lays its eggs once a week, or oftener, with a greasy rag. This destroys the nits, and prevents their generation in the stomach of the horse. Almost every one has noticed small white eggs on the fore-legs and other parts of horses. These annoy the animal.—He bites at them, gets them in his mouth. A very short time is required to hatch them, when they crawl down the throat of the horse, into the stomach, where they expand into that ugly and almost indestructible grub called the Bot. These grubs when in excess, gnaw at the coats of the stomach, and will in a very short time, if not prevented by some remedy, take the life of the noble animal. Now, as we said above, rubbing the parts on which the nits are deposited with a greasy rag will kill the eggs, and prevent all the evils arising from the bots. Let every humane and economical man see to this.

After the bots have developed themselves in the stomach, a drench of sage tea is about as good a remedy as we have seen tried. At all events it can do no harm.—*N. C. Argus.*

ANNUAL MEETING OF THE NORTH CAROLINA STATE AGRICULTURAL SOCIETY, OCTOBER, 1855.

RALEIGH, Oct. 15, 1855.

THE North Carolina State Agricultural Society met this evening, in the Commons Hall—and was called to order by the President, (Ex-Chief Justice Thomas Ruffin.)

Dr. Crudup remarked, that a leading object of this meeting was to perfect the list of Judges, by supplying the places of absentees. He spoke of the importance of prompt and impartial awards to competitors to secure the success of our annual exhibitions, and impressed very forcibly the necessity of individual action on the part of every Judge. The names of the Judges were then called, with the view of ascertaining those present; when so small a number of them answered, it was agreed to postpone further action on the subject, until to-morrow evening, under the hope that, in the mean time, many of the absentees would arrive.

On motion of Mr. Wilson Whitaker, an opportunity was given for the reception of members.

The President suggested the importance of the old members renewing their subscriptions, and so aid in securing the State's appropriation of fifteen hundred dollars.

Hon. Calvin Graves said, this was the first time he had had the pleasure of meeting with the society. He found his name among the list of Judges, but was not a member, unless some friend had entered his name without his knowledge: and on being informed his name was not recorded, he and a large number of other gentlemen, (among whom was the Governor of the State,) came forward and were enrolled as members for 1855.

Mr. Dancy gave notice that on to-morrow night, he should move that the Society select an organ.

Dr. Holt said that there had been much confusion heretofore, owing to the want of some general direction at the Fair Grounds; and he thought it highly necessary that the efficient services of the Chairman of the Executive Committee should be given, as far as practicable, to every department.

The Chair vouched that Dr. Crudup would be found WHEREVER DUTY REQUIRED.

By order, the call for reports from committees, was deferred until next meeting.

Dr. Crudup made some remarks in regard to the duties of the Committee appointed to revise the Constitution and By-Laws of the Association; in the course of which he suggested for the consideration of the meeting, the propriety of a provision for the receiving of life-members, as eminently calculated to contribute to the permanence and success of the institution.

The Chair took occasion to express his entire concurrence with the views of Dr. Crudup. He confessed, his mind had undergone a thorough change on the subject, since the last annual meeting. He thought at first blush, that it was best to confine the membership to annual subscriptions; but upon more mature reflection, he had adopted the opinion that the plan of life-membership should also be introduced, to secure larger subscriptions and more permanent connection with the Association.

On motion, the following Provisional Committee was appointed to receive guests from other State Fairs, viz: Messrs. Jno. S. Dancy, of Edgecombe; Richard H. Smith, of Halifax; and Samuel P. Hill, of Caswell.

The Society then adjourned until to-morrow evening half-past 7 o'clock.

THOS. J. LEMAY, Sec'y.

TUESDAY EVENING, 7½ o'clock, Oct. 16, 1855.

The North Carolina State Agricultural Society met pursuant to adjournment, and was called to order by the President.

Dr. Crudup said that the subject to which he called the attention of the meeting last evening was that of perfecting the list of Judges, and as it had been ascertained that but a comparatively small number of those appointed were in attendance, he now proposed to fill the blanks in the committees; and after some spirited remarks on the importance of securing the services of competent Judges, and the indispensable necessity of prompt, united, concentrated and energetic efforts on the part of all who are engaged in the management of the affairs of this institution, proceeded to call over the names of the original committees, with the request that the members present would suggest suitable persons to fill the places of those who were absent. Having thus filled the places of absentees and completed the list of Judges,

Dr. Crudup moved, as the names of the committee appointed at the last annual meeting to revise the Constitution and By-Laws, were lost, that a new Committee of four be appointed for that purpose; which was agreed to, and the Chair appointed the following gentlemen to compose said committee, to-wit: Messrs. Jno. S. Dancy, R. H. Smith, Ed'wd. A. Crudup, and Dr. Wm. R. Holt.

On motion of Dr. Crudup a Finance committee, consisting of three, (including the Treasurer) was appointed, consisting of Messrs. C. L. Hinton, D. W. Courts, and R. R. Bridgers.

Mr. Dancy, in pursuance of notice given by him last evening, now proposed that the Association take up and dispose of the question of the organship.—He said he had no particular plan to offer, and was

unprepared to say what would be the best course to pursue.

Gen. Littlejohn moved that the Arator be adopted as the organ of this Society.

Hon. Mr. Venable, in a speech of some length, opposed the adoption of any organ.

Mr. Taylor moved that the motion be laid on the table until to-morrow evening.

Hon. S. P. Hill moved that the subject be reported to a committee of five; which he subsequently withdrew.

The President stated that at the called meeting in January, the Society resolved that there should be an organ, and referred the adoption of one to the Executive Committee, who, it was understood, could not agree; but that the committee had made no report.

The Chairman of the Executive Committee was then called upon for a report, and stated, verbally, that the committee could not agree, in the selection of an organ, and therefore the subject came back to the Society.

Mr. Poole said his impression was, the Committee had resolved to have no organ.

Dr. Crudup repeated that his own statement of the matter was correct.

Mr. Burgwyn moved that the resolution of Gen. Littlejohn be postponed indefinitely.

Mr. Bridgers said he was desirous of being heard on the subject, and doubted not there were others who entertained the same desire; and he therefore moved an adjournment, which was carried, and the Society adjourned until to-morrow evening half-after 7 o'clock.

THOS. J. LEMAY, Sec'y.

WEDNESDAY EVENING, 7½ o'clock, Oct. 17, 1855.

The North Carolina Agricultural Society met according to adjournment.

The first business in order being the motion to lay on the table for the present, the motion made by Gen. Littlejohn, to adopt the Arator as the organ of this Society, the question thereon was put by the Chair, and the motion (to lay on the table) was decided in the affirmative.

Mr. Smith, of Halifax, moved that all the regular officers be now ballotted for; which was agreed to.

The President's election being first in order, the Hon. Thomas Ruffin was unanimously re-elected President of the Society for the ensuing year.

The two Ex-Presidents, Messrs. John S. Dancy, of Edgecombe; and Richard H. Smith, of Halifax, were then elected first and second Vice Presidents; Dr. W. R. Holt, of Davidson, 3d Vice President; and Hon. Wm. A. Graham, of Orange, 4th Vice Presi-

dent; J. Fabius Hutchins, of Wake, was re-elected Treasurer; and Thos. J. Lemay, C. & R. Secretary.

The Committees not being ready to report, the Hon. Wm. A. Graham was called on to address the Society, and responded.

Hon. A. Venable then addressed the Society.

Mr. H. K. Burgwyn, of Northampton, next addressed the Society on the effect of *guano* on wheat, and the best manner of sowing.

Prof. Emmons, State Geologist, was loudly called for; but was absent from the Hall at the time.

Ex-Gov. Morehead, of Guilford, responded upon a call, discussing the effects of Railways on the interests of Agriculture.

Mr. Vice President Smith, of Halifax, then made some remarks on the necessity of more exertion on the part of our planters, and in regard to Railroad charges on articles.

Dr. Crudup addressed the Society upon its present prospects, and in relation to charges for carrying articles to the Fair on Railroads.

On motion of Mr. Burgwyn, the Society adjourned until to-morrow evening 7½ o'clock.

THOS. J. LEMAY, Sec'y.

THURSDAY EVENING, 7½ o'clock, Oct. 18, 1855.

The Society met. The President being absent, the Hon. Wm. A. Graham was called to the Chair.

The Secretary of the Society being absent, on motion, Wm. D. Cooke was appointed Secretary *pro tem*.

The committee on the revision of the Constitution reported as follows:

To strike out the 5th section of the Constitution. In the 3d line of the 6th section, after the word "committee", insert "of which the President of the Society shall be *ex-officio* Chairman." After the word "Fair," in the 7th line, add the following: "To make all necessary preparation for holding the State Agricultural Fairs; to appoint a Secretary to their body, with such compensation as they may deem necessary; and to cause a journal of their proceedings to be kept, which shall be submitted to the Society at its annual meeting in October."

In the 2d line of the 6th section of the By-Laws, strike out the word "fifteen," and insert the word "seven." In the 4th and 5th line, strike out the words "by the Society."

On motion, the recommendation of the Committee to strike out the 5th section was concurred with.

The recommendation of the committee in regard to the 6th section of the By-Laws was taken up, and the section amended so as to read as follows:

"6th. That it shall be the duty of the President to appoint annually a committee of seven, to be styled the Executive Committee, (of which the Pres-

ident of the Society shall be *ex-officio* Chairman, whose duty it shall be to make all necessary preparations for holding the State Agricultural Fairs; to appoint a Secretary to their body, with such compensation as they may deem necessary; and to cause a journal of their proceedings to be kept, which shall be submitted to the Society at its annual meeting in October."

On motion of Hon. Wm. A. Graham, the following By-Law was adopted:

That in future, those members of the Executive Committee who come to Raleigh to attend on the business of said committee, be paid their necessary travelling and hotel expenses; and the Treasurer is hereby authorized to cash their accounts upon demand, when duly authenticated.

Mr. Samuel H. Christian offered the following resolution:

Resolved, That the fee for membership be hereafter two dollars, instead of three.

Mr. Wm. Albright proposed as an amendment, that the fee should be reduced to one dollar; which was rejected.

The question recurring on the original resolution, it was adopted.

On motion of Hon. K. Rayner, it was

Unanimously Resolved, That the thanks of the State Agricultural Society are due, and are hereby tendered to the Hon. Thos. Ruffin, for the very able and instructive address this day delivered by him, and that 1,000 copies of the said address be printed and distributed under the direction of the Executive Committee: One copy to be sent to each member of the State Agricultural Society.

Dr. Crudup offered the following resolution:

Resolved, That upon the payment of the sum of Twenty Dollars to the Treasurer of the Society, the person so paying the same shall be constituted a life member of the same, and shall be exempt from the payment of the annual tax.

Which was laid on the table.

Mr. R. R. Bridgers offered the following resolution:

Resolved, That the Executive Committee be instructed to have a fence made from the west end of the building on the west of Floral Hall, parallel with the west side of the Fair Grounds; also a fence from the east end of Floral Hall parallel with the west side of the Fair Grounds; and that the stalls within this enclosure be removed to some other part of the grounds; and that no carriage or other vehicle shall be allowed to go on any other part of the Fair Ground, during the hours of exhibition, unless the same be entered for exhibition.

On motion of the mover, the resolution was laid upon the table.

The following report was presented:

The committee appointed at the meeting of the

Society in January last, to revise and superintend the publication of the proceedings of this Society from its organization, beg leave to report: That owing to the low state of the funds at that time, they deemed it expedient to postpone the publication of the transactions of the Society until after the present meeting; and they therefore recommend the adoption of the following resolution:

Resolved. That the same committee be instructed to have all the transactions of the Society printed as soon as practicable after the adjournment of this annual meeting; the said transactions to contain a record of the proceedings of the Society, from its organization, together with the addresses that have been delivered at its annual meetings, with the Premium Lists and Awards of Premiums, and all such matter as the committee may consider necessary, and that one copy be sent to each member of the Society who has paid his fee.

E. A. CRUDUP,

W. D. COOKE.

On motion, the report was concurred in and the resolution adopted.

The President announced the following appointments:

Executive Committee.—Dr. E. A. Crudup, Charles L. Hinton, R. A. Hamilton, Richard H. Smith, John S. Daney, Paul C. Cameron, and W. H. Jones.

Chief Marshal.—Gen. J. B. Littlejohn.

1st Assistant.—S. Hays, of Granville;

2d. " Col. G. W. Watsoh, of Johnston;

3d. " J. H. Yarborough, Franklin;

4th. " Ivy T. Lewis, Pitt;

5th. " Benjamin Norfleet, Edgecombe,

6th. " W. B. Foster, Franklin.

On motion, the Society adjourned to 7½ o'clock to-morrow evening.

Wm. D. COOKE, *Sec'y. pro tem.*

FRIDAY EVENING, 7½ o'clock, Oct. 19, 1855.

The Society met according to adjournment—the President in the Chair.

The minutes of the last meeting were read and approved.

Dr. E. A. Crudup tendered his resignation as a member of the Executive Committee, which, on motion, was accepted.

On motion of Mr. H. K. Burgwynn, it was

Resolved, That the Treasurer be authorized to pay to the Chairman of the Executive Committee of the Society for the past year the sum of \$200, in payment of his expenses.

On motion of Mr. R. H. Smith, it was

Resolved, That the salary of the Treasurer be here-

after increased to the sum of two hundred dollars per annum.

The Treasurer, Mr. J. F. Hutchins, offered his bond, with Messrs. Jno. Hutchins and Jno. P. H. Russ, as sureties; which was accepted.

The President appointed Mr. Wm. R. Pool a member of the Executive Committee, in place of Dr. E. A. Crudup.

Mr. King presented a bill, amounting to \$28.50, for services and lighting the Hall for the meetings of the Society; which, on motion, was ordered to be paid.

On motion, the President appointed the following Committees:

Committee of Reception.—L. O'B. Branch, G. W. Mordecai, and K. Rayner.

Committee to invite a Speaker to deliver the next Annual Address before the Society.—Dr. E. A. Crudup, R. A. Hamilton, and H. K. Burgwyn.

Delegates to the Fair at Petersburg.—Maj. C. L. Hinton, and R. A. Hamilton.

Delegates to Richmond.—H. K. Burgwyn, R. H. Smith, Jno. S. Dancy, and W. R. Holt.

Delegates to Baltimore.—Dr. W. R. Holt, R. H. Smith, H. K. Burgwyn, and Jno. H. Bryan, Jr.

On motion, the resolution increasing the salary of the Treasurer was reconsidered, and after being amended so as to increase the salary to two hundred dollars for the past year as well as hereafter, was passed.

On motion of Dr. Crudup, it was

Unanimously Resolved, That the special thanks of the Society be tendered to Mrs. Cotten and other ladies, for their services and contributions in Floral Hall during the week of the Fair.

On motion of Mr. R. H. Smith, it was

Unanimously Resolved, That the thanks of the Society are due and are hereby tendered to the Executive Committee and the Marshals and Assistants, for their services during the past year.

On motion, adjourned *sine die*.

WM. D. COOKE, *Sec'y. pro tem.*

STACKING CORNSTALKS.—A correspondent of the *Boston Cultivator* has tried various methods of curing his cornstalks, but without satisfactory success. Last fall after the stalks were sufficiently cured, he carted them into the barn, and instead of setting them up, as formerly, he packed them down, and on every layer of stalks put a layer of fine salt, say a bushel to a ton. The cattle eat them up clean, and he is satisfied with the result.

ADDRESS OF HON. THOMAS RUFFIN, OF ALABAMA.

Delivered before the State Agricultural Society of North Carolina, October 18, 1855.

THE duty has been assigned to me of making to this assemblage of our fellow citizens the usual annual address on behalf of the Agricultural Society of North Carolina. I heartily wish for your sakes, as well as my own, that it had been allotted to some other person more competent to instruct or entertain. But, though reluctantly, I have undertaken it, that I might, if no other good should be done, show my concern in the welfare of the agriculture of North Carolina and its kindred arts, and my zeal for their advancement and prosperity, under a confident assurance, indeed, of the kind consideration of North Carolinians for the imperfections of one who, though long unused to public speaking, is sincerely desirous, in any way he can, of magnifying to North Carolinians their chief calling and office, and endeavoring to make them satisfied with their situation here.

In the first place it is fit, that to all here thanks for their attendance and a hearty welcome should be tendered. The purposes of the Society and the modes of effecting them, are generally known; and we invite the co-operation of all in the good work. Join in our association. Let every one add what he can to the general fund of agricultural knowledge. Enter into the competition for improving tillage, perfecting and increasing the productions of the grains, the grasses, the vegetables, and the fruits of the earth, our animals and our implements of husbandry, and other manufactures; and exhibit here at our Fairs such things as you have. Indeed, those who bring only themselves are very welcome; for, after all, our men and women are our best productions, and it can only raise a just pride to see them gathered together to extend acquaintance, form friendships, gain and impart knowledge, honor agriculture, and thereby become the more content with our lot being cast in North Carolina.

Next, the Agricultural Society owes, and we ask the agricultural community to join in making, acknowledgments to the General Assembly for the pecuniary aid extended to the Society. Its usefulness depends chiefly on its ability to offer and pay premiums to exhibitors to such an amount as may stimulate competition and multiply exhibitions. A proper amount of premiums was larger than could be confidently counted on at all times from the fluctuating and uncertain contributions of annual subscribers and visitors at the Fairs; and, since our last annual meeting, the Society presented to the Legislature a memorial praying such assistance from

the Public Treasury as that body might deem requisite to the advancement of agriculture and manufactures among us. I am happy to announce here, that, in compliance with the memorial, a permanent annual appropriation of \$1500 was made for the payment of premiums, subject only to the reasonable and politic proviso, that within the preceeding twelve months, the Society shall have raised the like sum for the same uses. The appropriation, if not fully adequate to the wants and claims of a people as agricultural as those of North Carolina, is yet of great benefit in many respects, and chiefly as permanently establishing the Society and Fairs, since, it cannot be supposed that the farmers and mechanics and traders of the State have hearts so dead to their duty and interest as to let them fail for want of contributions on their part to an equal amount. The present is the first occasion, since the grant, on which the Society has had the opportunity of acknowledging this legislative bounty, and we take much pride and pleasure in doing so.

Now, it may be asked : Is the agriculture of North Carolina worthy of this public patronage, and of the efforts of some of her citizens to promote and improve it ? I answer, Yes—yes. North Carolina is entitled to all, that every one of her people can do to promote her prosperity and elevate her character ; and her sons will be amply remunerated for their efforts for her advantage and their own. Our occupations are essentially agricultural, and embrace all its variety of pursuits—planting, farming, breeding of live stock, and the culture of fruits. Until very recently they were almost exclusively agricultural, as there were natural obstacles to foreign commerce, difficult to overcome, and but few manufacturing establishments among us. In both these respects progress has been made and is making ; and there is good ground of hope, that before long fleets of our own merchantmen will sail from our shores, richly laden with our productions for sale or exchange in the ports of our sister States and foreign countries ; while factories of various kinds, now established in different parts of the State, will be multiplied beyond any present calculation that can be made, not only for the fabrication of the most useful implements of wood, iron, and other metals, but for our supply of those fabrics out of the great Southern staple, cotton, which have become indispensable.—Manufactures are already, without doubt, material helps to agriculture, by diversifying employments, increasing the consumption at home of our crops and stocks, and supplying on the spot and without delay many articles needful to the planter and farmer. In time they will become a more distinct, productive, and influential item in our political economy ; but never, I think, as the rival or foe of our

agriculture, but as a faithful friend and servant. As yet, however, the cultivation of the earth is the great and productive business of North Carolina. It has made us hitherto a thriving and happy rural people. We are still so ; and it will make us still more so, as it becomes improved and more productive. Why should not the agriculture of North Carolina be as improveable and improved, and her sons engaged in it, as prosperous and happy as those of any other parts of our country ? No reason of weight can be given in the negative, if we will but strive for improvement. Every thing is in our favor if we will make the effort and use the proper means ; and of that every one may be satisfied if he will observe and reflect on what is around him.

The profits and the comforts of agriculture depend mainly on climate, soil, labor, and the facilities for disposing of surpluses of production. The two first, climate and soil, should be congenial to products requisite for the sustenance of the husbandman himself, and in demand for others who cannot produce for themselves. In both points North Carolina is highly blessed. In her position on the globe she occupies that temperate and happy mean, which is conducive to health and the vigorous exertion of the faculties and energies of body and mind, in employments tending more than all others to the hospitalities and charities of life and the other virtues of the heart, and which constitutes a climate, that, in unison with her fertile soil, yields abundantly to the diligent tiller nearly all the necessities and many of the luxuries required by man. We do not work barely to maintain life ; but, beyond that, to realize gains that may be employed in the addition of other things productive of the elevation and refinement of civilized man. Our winters, by their duration and rigor, do not confine us long within doors, nor cause us to consume the productions of our labor during the other parts of the year ; but we are able to prosecute our field operations and comfortably pursue our productive employments throughout the four seasons. Though not of such extent of latitude as thereby to create much variety of climate, and consequently of production ; yet the dimensions of North Carolina, east and west, supply that deficiency in a remarkable degree. The proximity to the ocean of her eastern coast, and the difference in elevation between that and the mountains of the west, with the gradations in the intermediate regions, produce a diversity of genial climate which gives to North Carolina, in herself, the advantages of many countries conjointly. By nature, too, her soil was as diversified and as excellent as her climate. The rich alluvial of the east, the extended and extremely fertile valleys of the many long streams—the Roanoke, the Tar, the Neuse, the Cape Fear, the

Yadkin and Pedee, the Catwba, and other rivers, which appear upon our map, besides those of smaller streams, almost numberless, all, at a moderate expense of care and labor, return large yields of nearly every grain and other production fit for food: Rice, maize, wheat, rye, barley, oats, the pea, the potatoe of each kind, besides an endless variety of other sorts of vegetables, and fruits, are found abundantly therein; while higher up the country, in addition, the grasses grow so readily and luxuriantly as to afford not little plots on the moist bottoms of brooks, but extensive pastures and magnificent meadows to the mountain tops. Then, there are the great articles of cotton and tobacco, so extensively used and in such great and increasing demand—to one or the other of which the greater part of the State is eminently suited. Of fruits, melons of every kind and of the best qualities, apples, peaches, pears, cherries, nectarines and apricots flourish almost everywhere, as do also the smaller, but most valuable kinds, as the strawberry, the raspberry, the gooseberry, currants, and, above all, our native grapes, the sweet and prolific Scuppernong and the rich Catawba, which mature well, besides some of foreign origin. When to these are added the fish, with which our eastern waters abound through the year, but are alive in the spring—our naval stores and lumber, our marls, our minerals, gold, silver, copper, and especially the extensive and rich deposits of iron ore, and the coals, one may confidently ask, is there any other country which contains or produces more or a greater diversity of things, to sustain life or to bring money? And then let me enquire of you, North Carolinians, what better country do you want than your own? I hold it is good enough—too good, I am tempted to say, for sinful man. It requires only to be dressed and tilled to give nearly all we want on earth, and much for our fellow man less happily situated. There may at some time be a stint below our usual abundance; but we need never fear a famine here while we work. Indeed, that calamity can hardly befall a country where maize—which we call Indian corn—grows to perfection. There is no record of a dearth, approaching famine, where the principal crop was maize, as it is here. Our climate and soil are so congenial to the other cereals, that a failure of that crop from an unpropitious season is necessarily perceived in time to provide the others, or some of them, as a substitute.

Such is North Carolina! Here she is, and let any man say, who can, whether she be not in everything as she has now been held up to him. Then, why should any leave her? I trust the period of her people's deserting her and seeking—what they never found—a better place, is near its end, and that they

will cleave to her and exalt her by uniting in an effort to render her, by increased fertility, yet more teeming in her productions, and to embellish her with durable and tasteful habitations, gardens and lawns, with substantial farm houses, with orchards and every other thing that can make her beautiful in our eyes and fasten our affections on her. True, the soil is not what it once was, and our task is not merely to preserve fertility, but in a great degree to restore that which has been more or less exhausted. We must not blame our ancestors too hastily or too severely, for the system under which the rich vegetable loam they found here was so used up. The labors and hardships of settling a wild country leave but little opportunity for more than preparing for cultivation and cropping such parts of the land as are absolutely necessary for maintaining the colony. Land was in plenty—timber an incumbrance, and labor scarce and costly; so that, in reality, it was cheaper, and the sounder economy in them to bring new fields with their exceeding superficial fertility into culture, rather than manure those which they had reduced by imperfect tillage and scourging cropping. Throughout America the land suffered by the exhausting operations of the settlers and their descendants for several generations; but that can only go on to a certain extent, and then it must stop. When getting to be so reduced as not to pay for cultivation, necessity forbids a further reduction of the soil, and then the process of regeneration begins.—At first it proceeds slowly; but every degree of improvement furnishes means for still greater, and accordingly it increases its pace, and by improved culture, manures, rotation of crops, and the like, it ends in a productiveness beyond its original capacity.

If not to the lowest, certainly to a very low condition, much of the land in the State had been brought; and the time came, when, if improvement was ever to be made, it would be commenced. I use the expression, "the time came" instead of "has come," because it is a joyful fact, that some persons in various parts of the State, many in some parts, have improved, and continue to improve their lands and increase their crops—profiting much therefrom in their fortunes and setting the rest of us examples by which we ought also to profit. We have all heard for some years past, that the era of improvement had begun in the great and wealthy county of Edgecombe; and I learn from unquestionable sources, that the intelligent and enterprising planters of that county have been rewarded by signal success, I do not propose to enter into a detail of their system further than to say, that it consists chiefly in draining by ditches and embankments, making and applying composts, the use of guano and plaster of

Paris, and the field-pea as an ameliorating crop, as well as food for stock. I advise every one, however, who has the opportunity, by minute enquiries to obtain from those who have put this system into use, detailed information respecting it; and I feel no hesitation in preferring a request to the planters of Edgecombe, as public-spirited gentlemen, to communicate through our agricultural periodicals, the history of their improvements, and their experiments—as well those in which they failed as those in which they succeeded, with all other matters which may be useful to their brethren in other sections.

In other parts of the country, with which I am more intimately acquainted, much improvement has been made, to my own knowledge. Of the counties ranging along our northern border, from Warren to Stokes, inclusive, I have had for about fifty years considerable knowledge. That was the principal region of the tobacco culture. According to the course of that culture, wherever it prevailed in our early annals, the country was cut down rapidly, cropped mercilessly with a view to quantity rather than quality, then put into corn, and exhausted quickly and almost entirely. When I first knew it, and for a long time afterwards, there were abounding evidences of former fertility, and existing and sorrowful sterility. Corn and tobacco and oats were almost the only crops. But little wheat and no cultivated grasses were to be seen in the country.—Warren and Granville bought the little flour they used from Orange wagons. Large tracts were disfigured by galls and frightful gullies, turned out as “old fields,” with broomstraw and old-field pines for their only vesture, instead of their stately primitive forests, or rich crops for the use of man. This is a sad picture. But it is a true one; and there was more fact than figure in the saying by many, whose work of destruction rendered that region so desolate, and who then abandoned it, that it was “old and worn out.” Happily, some thought its condition not so hopeless, and, cherishing their attachment for the spots of their nativity, within these few years—since the time of river navigation and railroads began—set about repairing the ravages of former days. Do you suppose they were content with less crops, and therefore that they cultivated less land than before, leaving a larger area to natural recovery by rest? That was not their course.—They did not give up the culture of tobacco, but greatly increased it, and corn also; and they added to their rotation, wheat, when so much more easily and cheaply carried to market. But they greatly increased the collection and application of manures from the stables, and the cattle yards, with considerable additions of the concentrated manures obtain-

ed from abroad, and protected the land from washing by judicious hill side trenching and more thorough plowing. The result has been, that many old-fields have been reclaimed and brought into cultivation, the lands generally much increased in fertility, and of course, in actual and market value in the like proportion, while the production has, probably, doubled in quantity and value in all the range of counties mentioned. Such examples are honorable to those who set them, and useful to others, who desire to improve. For that reason I have thought it proper thus to signalize them, as I would gladly do others, which may, and I hope do exist, were I as well aware of them: contenting myself with adding only, that I think I see the dawn of a better day in the county of my own residence and those contiguous. For our present purpose, it is sufficient that we can hence learn that the effects of the most injudicious and destructive cropping may be repaired by good husbandry, in the use of fertilizers saved on the farm, and others, which are becoming better known and more attainable than formerly; and thus all the outlay will be more than reimbursed at a short day by the increase of products, besides enhancing the value of real estate. Thus will our agriculture be rendered as pleasing and as profitable as that of the most favored portions of the earth.

Then let me say once more to you, men of North Carolina, stick to her, and make her what she can be and ought to be. For you and your sons she will yield a rich harvest: to some “thirty fold, some sixty fold, and some an hundred fold,” according to the skill and diligence with which the tillage of the good ground is done.

The nature of the labor employed in our agriculture is the next subject for our consideration. It is a most important element in the cost, amount, and value of production. I very frankly avow the opinion, that our mixed labor of free white men of European origin and of slaves of the African race, is as well adapted to the public and private ends of our agriculture as any other could be—making our cultivation not less thorough, cheap, and productive than it would be, if carried on by the whites alone, and far more so than the blacks by themselves would make it; and, therefore, that it has a beneficial influence on the prosperity of the country, and the physical and moral state of both races, rendering both better and happier than either would be here without the other. Of course, I am not about entering into that controversy which has connected itself with the contentions of sectional factions, struggling for political power. It is unnecessary that I should; for every one is aware, I believe, of the nature of the controversy and the motives of the parties to it. It is one of the consecutive effects of

slavery to impress on us a deep conviction of the inestimable value of the Union, and a profound reverence for the Constitution which created it; and hence we habitually cherish a good feeling, as of brethren, towards our fellow-citizens of every State, and any deed or word tending to impair the perpetuity of the Union and the efficiency of the Constitution and the laws passed in accordance with it, or to alienate the affections of the people of the different States from each other, is seen with impatience and frowned on with indignation. Indeed, if there were any thing in slavery or the interests connected with it incompatible with that fundamental law, I doubt not that our people would willingly abide by that sacred instrument, though it should cut off a right hand or pluck out a right eye. But there will be no occasion for a display of our loyalty in that respect, since the Constitution clearly recognizes our slavery, sustains the rights of ownership, and enforces the duty of service; and I am persuaded, that the obligation of those provisions and their execution will be ultimately pronounced and carried out by those on whom the Constitution itself confers the authority. My purpose now, however, is merely to maintain that slavery here is favorable to the interests of agriculture in point of economy and profit, and not unwholesome to the moral and social condition of each race. In support of the first part of the proposition, a decisive argument is furnished by the fact that the amount and value of the productions of slave labor in this country exceeds those of similar productions, nay, of all other agricultural productions, of an equal number of men in any other country, as far as they can be ascertained. In some localities, indeed, and in respect to some articles of great value, the production would cease, or nearly cease, with slavery; since the blacks by the Constitution inherited from the African ancestors, can labor without detriment, under degrees of heat, moisture and exposure, which are found to be fatal to the whites, whose systems are better adapted to different conditions of the atmosphere. In truth, if the free men in those States in which slavery prevails be allowed credit for common sense and the capacity to understand their own wants and interests, the utility of the employment of slave labor and its productiveness are established beyond controversy, simply by the fact, that it is done. Men who are thoroughly versed in the practical operation of any institution, certainly will not, to their own prejudice, uphold it from generation to generation, and cling the closer to it as by its natural extension it becomes more and more destructive. If it be said that the continuance of slavery does not prove its utility to the Commonwealth, because it was continued of necessity and would have been, however impolitic it

might be found, we must own some force in the suggestion, by itself, since at all times after its introduction it would have been difficult to get rid of it, and that difficulty has been continually increasing. It was much easier for those who now condemn so strenuously our toleration of slavery, to capture and enslave the helpless Africans and bring them here, than for us, without crime yet more heinous, to renounce our dominion over them and turn them loose to their own discretion and self-destruction. Their fate would soon be that of our native savages or the enfranchised blacks of the West Indies, the miserable victims of idleness, want, drunkenness, and other debaucheries. But the argument goes only to show that we would have done right—even though enforced thereto by the necessity spoken of—in still holding those people in bondage. It is far from showing that slavery would not have been and ought not to have been maintained, though there had been no such hypothetical necessity for doing so. Furthermore, there are numerous facts to prove a clear opinion to the contrary in every class of our population. When did any man, for example, leave North Carolina in order to get clear of his slaves or of slavery? We have, indeed, a respectable and peaceful religious society—less numerous than formerly—who are forbidden by an article in their creed from holding men in slavery. Even they never wavered or contended against this institution here, nor sought to seduce or spirit away their neighbor's slaves; but like the quiet and Christian men they professed to be, they left us and immigrated chiefly to the States of the North West, in which slavery did not exist. With that slight exception, the public sentiment is so generally satisfied with the existence of slavery and its propriety here, that it may properly be called universal. Some men have emancipated some or all of their slaves by sending them to other States. But I know not of an instance in which the former owner went with them, or left North Carolina because other owners would not follow their example. On the contrary, when our slaveholders remove, they carry their slaves with them further south, where slavery is, if possible, more firmly fixed than here, because they expect the labor of the slaves to be more productive. Besides, there are many inhabitants of this State who do not hold slaves, some from choice and some from inability to purchase them, and nevertheless, they are content to abide among us and our slaves. And it is also true, that even when those men migrate, much the larger part of them likewise go to the south of us in the thick of slavery, because they hope to make a greater profit from their own exertions. These facts, which cannot be denied, will bear reflection, and furnish evidence sufficient to satisfy any fair mind

that there is an unanimous conviction of our people that slavery, as it exists here, is neither unprofitable, nor impolitic, nor unwholesome. For certainly, though slaveholders, we may claim to possess as clear understandings, and as clear consciences as generally fall to the lot of other men.

It would, indeed, be otherwise, if it were true, as supposed or set forth by some, that slavery degrades free labor, and, consequently, that our population are too proud or too lazy to work, and become, especially slave owners, dissolute and profligate in morals, as well as atrocious tyrants. But that is not true—not at all true; and there never was a greater mistake than to suppose it true. It cannot but excite a smile in us, who know the contrary so well, when we are told that white men do not work here, and that they do not because it is considered disgraceful. Why, there is not a country on earth in which honest labor and diligence in business in all classes and conditions, is considered more respectable, or is more respected.—We, like every other people, have the idle and vicious amongst us. But they are chiefly those who have the least connexion with slaves, and particularly those employed in agriculture, and are to be found, without means, lounging about cities and villages. Many most independent farmers, who own slaves, but not enough to make their superintendence full employment, work, they and their sons, with their slaves; and it is sure, that no one here ever treated them or thought of them as disgraced by it. Indeed, every one, who by intelligence, integrity, and industry, provides for himself and his household either in the field or at the forge, or any other mechanical pursuit, is as highly respected here, as in every other well-ordered community; and many of them are of great and useful influence in society.

It is a mistake, too, equally notable, that slaveholders are above or exempt from the cares and the business of life; and it is a gross calumny to represent them as the ruthless and relentless tyrants, of whom some persons delight to draw overcharged and exaggerated caricatures. Although the labor of a large slaveholder is not manual, yet it is not the less engrossing and onerous; and the feelings between masters and their slaves in the great bulk of our population is kindly on the part of the former, and affectionately faithful on the part of the latter. Slavery, indeed, is not a pure and unmixed good. Nor is anything that is human. There are instances of cruel and devilish masters, and of turbulent and refractory slaves,

who cannot be controlled and brought into subjection but by extraordinary severity. But these are exceptions, and rare exceptions. Great severity in masters is as much opposed to the usages of our people as to the sentiment of the age, and, indeed, to the interest of the master. Moderation in the punishment of dependents is founded in nature; and unjust, excessive, and barbarous cruelty is not to be presumed, but quite the contrary. The meek man who led the Israelites through the wilderness, and legislated for them by inspiration, understood this better than those who paint us so frightfully, without knowing much about us. In treating of the different degrees of homicide, he had regard to the known motives of the human heart, and thereon founded the presumption, that the slaying of a slave by the master, is by misadventure, "because he is his money," unless it should be rebuked by such excess in the degree or duration of the infliction as to make him "die under his hand," and thus evince that discipline was a pretence, and the killing of designed malignity or wanton brutality. I appeal to every one, if our experience is not in accordance with the divine statute. The same motive induces the master to be observant of the health and morals of his slaves; to care for them, and to provide for them; to restrain them from baneful excesses, and employ them in moderate, though steady labor. That this is the course—the established habit of the slaveholding portion of the country, is plainly to be deduced from an increase in the numbers of our slave population beyond the ratio of natural increase in the population of any other nation;—which could only arise from the abundant supply of the necessaries and comforts of life, and a contented state of mind.

But the interest of the owner is not the only security to the slave for humane treatment; there is a stronger tie between them. Often born on the same plantation, and bred together, they have a perfect knowledge of each other, and a mutual attachment. Protection and provision are the offices of the master, and in return the slave yields devoted obedience and fidelity of service; so that they seldom part but from necessity. The comfort, cheerfulness, and happiness of the slave should be, and generally is, the study of the master; and every Christian master rejoices over the soul of his slave saved, as of a brother, and allows of his attendance on the ministry of God's word, and sacraments, in any church of his choice in his vicinity. The condition of a slave denies to him indeed, opportunities of education sufficient for

searching the Scriptures for himself, and working thereout his own conversion; but God forbid that should be necessary to salvation! It is not; for to the poor and the unlettered the Christian graces are promised and given in an especial manner, because they have less pride of intellect, more simplicity of faith, and more singleness of heart; and among the slaves of this country there are many exemplary Christians. Indeed, slavery in America has not only done more for the civilization and enjoyments of the African race than all other causes, but it has brought more of them into the Christian fold than all the missions to that benighted continent from the Advent to this day have, or, probably, those for centuries to come would, excepting only the recent Colonies of blacks on the western coast of Africa, by which one may hope and believe that under divine direction the lights of civilization and the knowledge of the true God may be reflected back on that whole land. Such are some of the beneficial effects on that race of their connexion with us: Upon the slaveholder the impressions are not less distinctly durable, nor less beneficial. He is habitually a man of employment. As in military life, he must train his troop to their duties, lay out their work, and superintend its execution; and by a mild and just, though firm discipline, reward and punish according to their deserts; and he must never fail in sympathy with them in regard to innocent enjoyments at proper times, and their needs in sickness and in health. Sometimes matters, very trivial in themselves, have exceedingly great effect in improving the slave and uniting him to his owner. I know a gentleman, one of the most successful planters, who produced a marked change for the better among his slaves, by the small boon of a cheap looking glass for each of their quarters.—Another bound his people to him by a devoted affection, by joining with solemnity in their processions at the burial of their dead, in a grave yard, which he had protected by a plain post and plank enclosure.

It is a great error in those who do not know our slavery, to confound authority in the private relations, though it be that of a slaveowner, with the absolute power of a prince on a throne. A political despot is separated from his subjects. He knows them not, nor loves them. He sympathizes with none of them, but their positions and feelings are in constant hostility. But authority in domestic life, though not necessarily, is naturally considerate, mild, easy to be entreated, and tends to an elevation in sentiment in the superior which

generates a humane tenderness for those in his power, and renders him regardful alike of the duty and the dignity of his position. It is only when the authority is disputed and resisted, that a conflict occurs; and the slaves, if kept to themselves, unprompted from without, will seldom give occasion in that way for rigor. Why should this propitious state of things be changed? Why should any wish a change? Especially, why should persons who have no concern in it, who are not of us, and know not what they do, officiously interfere in a relation so entirely domestic and delicate? We know that our slaves are generally humble, obedient, quiet, and a contented and cheerful race of laborers. Scattered over the plantations in rural occupations, they are never riotous or dangerous, as the same number of uneducated working men have often been in other parts of our country.—Slaves are no part of the State, with no political power, and seek no violent or sudden changes in the law or policy of the country; and where slavery exists labor and capital never come in conflict, because they are in the same hands, and operate in harmony. It is not, then, a blot upon our laws, nor a stain on our morals, nor a blight upon our land. A signal instance of its beneficial political influence just occurs to me, to which I cannot refrain from asking your attention. The sad fate of the Indian tribes in the territories, now forming the United States, is familiar to every one. With the exception of a few small remnants, scattered among the whites, as a degraded caste, in one or two of the northern States, all belonging to that region are extinct. They had no separate property, and therefore they never engaged in the pursuits of civil life, and could not be civilized.—They were killed up in wars with the whites, or, at their instigation, with each other, deprived of their land, and, consequently, with reduced supplies of food by the diminution of game, and brutalized by intemperance, they wasted away while they were yet savages. The same fate befell most of those at the South, and from the same causes.—But there are exceptions worthy of grave consideration. There were five large tribes on this side of the Mississippi—the Cherokees, the Creeks, the Chickasaws, Choctaws, and the Seminoles. The two former were nearer to us, and, indeed, part of their territory was within our borders. Therefore we are more familiar with them, and I will speak only of them, though I believe the same is true of all of them. The Cherokees and Creeks suffered losses of land and people like the other tribes; but they differed from them in one circumstance, at

only one, from which, however, most important consequences resulted. It so happened, that, while yet respectable in strength, they got, in some way—by capture or purchase—some negro slaves.—Immediately there was a change in their whole polity, which preserved their existence, and increased their numbers and their wealth. The acquisition of slaves gave them the idea of property in individuals, and in order to make the labor of the slaves beneficial, a qualified property in the lands occupied by each Indian, and worked by his slaves, was recognized by the nation, and the pursuits and arts of civilized life were established among them; farms were extended, dwellings erected, traffic practised, clothes worn after the fashion of the whites, schools and churches opened, and the red man became as the white man in his occupations, property, education, and religion. And now those tribes form intelligent and thriving people beyond the Mississippi, with enlarged knowledge, property, and power; with a printed statute book, with a legislative body, and regular tribunals of justice. Such works hath American slavery wrought upon those tribes! Is that a reproach to it? And is it not marvellous that, still, it should be pursued by persons having no knowledge of its practical operation, under a phrensy against slavery in the abstract, fatally bent on its restriction and destruction, though they thereby should desolate our fields, desecrate our altars, and cause the blood of both races of our people to flow in rivers? Such philanthropy is both fanciful and ferocious, and must gall and irritate, and may, to a certain extent, alarm some. But I believe we need not apprehend much danger to our personal rights or political institutions. Occasionally demagogues may sway popular or legislative majorities against us. But it can only be for a season, and a short season. For, in every part of our beloved country there are men, and, I trust, many men, of sound heads and sound hearts, who are as able as we to understand and explain the constitution, and calculate the value of the Union as justly. Such men must have great influence in society, however it may be constituted, and will assuredly instruct, persuade, and lead back the masses to a due regard for the Constitutional rights of their fellow citizens—not less their fellow citizens because living far apart—for multitudes, proverbially prone to change, never do so more readily, than when under the guidance of wise and good men, they can retreat from an extreme wrong, and escape from the domination of those who dishonestly led them into it. The very excess of the error en-

sure its speedy perception, and a more perfect reaction. I believe we shall be one people again in good feeling; and therefore I cherish the spirit of brotherhood even towards those who may now seem to hold it in the least respect; and in that I only sympathise, I am sure, with the great bulk of my fellow citizens at home.

On the remaining point, on which the interests of agriculture, and, indeed, of all other employments depend—namely, the facility of transportation, I have to offer to all North Carolinians heartfelt congratulations. The carriage of bulky and cheap articles long distances in wagons over bad roads, was a great draw-back on the profits of capital and labor for a long time here. Some relief in particular parts of the State was derived from even the imperfect improvement made in the navigation for boats on a few of our rivers. But it was far below the wants and demands of the people; and afterwards resort was had to Railroads. The wonders worked by steam, and railways are indeed astonishing throughout the world. In no part of it can they be more requisite or beneficial than in this State, the extent of which and the want of navigable waters at only a short distance from the sea, rendered them indispensable. Every one, therefore, ought to commend the legislative policy in providing them, and in extending them, from time to time, as the funds of the State may be found adequate. It will not, I trust, be going out of the way, while on this subject, to say a word in honor of the memory of a great and good man, who first presented the utility and construction of Railroads to the notice and patronage of this State: I allude to the Rev. Dr. Joseph Caldwell, the late eminent and zealous president of the University. Upwards of thirty years ago he visited Europe on the business of the College, and there saw such roads in use; and soon after his return, I remember, he published a series of essays under the signature of "Carlton," in a newspaper printed in this city, explaining the practicability of their construction and earnestly urging a central one from Buncombe to Beaufort. The novelty of the subject and the dread of the expense, operating upon timid counsels, prevented his suggestion from being then adopted. But it is honorable to his sagacity, that at the late session of the legislature charters were granted for completing a line of Railroad on the very route recommended by him, when probably it was unknown or had been forgotten by the acting generation of legislators, that he had ever advocated the measure. I shall be pained and forlorn for desiring to rescue from oblivion fir

a brief space longer his early service in a cause now so generally and justly advocated, and of such surpassing importance.

I have thus endeavored to lay before you the resources and advantages enjoyed by North Carolina, and her capacity to supply the wants of man, and satisfy his reasonable desires for accumulation and the higher enjoyments of both laboring and educated and more refined men. It has been done without setting up any claim for her, which I do not believe to be well founded, or any statement in which I do not expect your concurrence. In truth I have said nothing new, and I have not sought so much to impart information as to excite reflection on what you already know. For we take no note of things that we see every day, and it is a more common fault not to make a proper use of knowledge, than it is not to possess it; to fail in duty, not because we are ignorant of it, but because we are indifferent to it. My purpose has been to present to you, with much plainness of speech, things that none can deny and are fully known among us. You know that all these things are true. If they be, let them make their impress on our minds and hearts, that we may be duly sensible of, and thankful for, the goodly bounties of health, competence and wealth, which may be derived from the agriculture and other occupations of North Carolina.

I am quite sensible that I have performed most defectively the task set for myself. After the lapse of more than thirty years since I engaged in public discussion, I ought not to have undertaken it, and regret that I did so, especially as this address has been hastily prepared under many disadvantages. I beseech your forgiveness, and will make the best reparation now in my power, by promising not to offend in the same way again: and, as I have very nearly arrived at the scriptural limit of man's life, I think I may, in conclusion, safely make the promise. I cannot close, however, without asking you once more to cleave to North Carolina. Stay in her, fertilize her, till her, cherish her rising manufactures, extend her railways, encourage and endow her schools and colleges, sustain her institutions, develop her resources, promote knowledge, virtue, and religion throughout her borders, stimulate State pride, and exalt her to renown: And may the blessing of Almighty God be upon each one of you, and on all North Carolina, and make her good name and fair fame endless!

Rocks are easily broken in pieces by building a fire on them, and throwing on water while hot.

LIST OF PREMIUMS

Awarded at the Third Annual Fair of the N. C. State Agricultural Society, Oct. 1855.

Branch 1st.—Live Stock.

FIRST DIVISION.

First Class—Thorough Bred.

Best Stallion over 4 years old, Gen. M. T. Hawkins, 1st premium,	\$25
2nd best Stallion over 4 years old, W. F. Petts, 2nd premium,	15
Best Brood Mare over 4 years old, Gen. M. T. Hawkins, 1st premium,	15
2nd best Brood Mare over 4 years old, P. C. Canacron, 2nd premium,	10
Best Mare over 2 and under 4 years old, Gen. M. T. Hawkins, 1st premium,	10

The committee cannot withhold their admiration of a yearling colt, the property of Gen. M. T. Hawkins, and recommend him to the consideration of the Discretionary Committee.

William R. Holt, J. U. Kirkland, Walter Gwynn, Committee.

2nd Class—Quick Draught and Saddle Horses.

Best Stallion over 4 years old, S. O'Bryant, 1st premium,	\$20
Second best Stallion over 4 years old, F. M. Parker, 2nd premium,	10
Second best Brood Mare over 4 years old, S. O'Bryant, 2nd premium,	5
Best pair matched Carriage Horses raised in the State, W. H. Holderness, 1st premium,	20
One Colt, 2 years old, Ab. Scott, 1st premium,	5
One Black Horse, Jacob Sorrel, 1st premium,	10
One Harness Horse, S. T. Cuthberston, 1st premium,	

C. H. JORDAN, Cl'm.

3rd Class—Heavy Draught Horses.

2nd best Stallion over 4 years old, Jno. Hayes, 2nd premium,	\$10
Best Brood Mare over 4 years old, Starling Parish, 1st premium,	15

In this class the committee examined a very fine Gray Horse, 5 years old, exhibited by S. O'Bryant of Roxboro' being superior to any horse in this class on exhibition—all other horses were ruled out for the first premium. In consequence of this horse having drawn a premium at the N. C. State Fair last year, the committee could not award the same horse a premium this year. Given under our hands this 17th of Oct. 1855.

H. T. Clark, J. A. Whitaker, J. M. Cunningham, Committee.

JACKS AND JENNETTES.

Best Jack, with approved certificates, imported, A. Walker & Co., 1st premium,	\$20
Best and largest Jack, raised in the State, Gen. M. T. Hawkins, 1st premium,	20
Best and largest Jennette, raised in the State, S. W. Cotton, 1st premium,	10
John S. Dancy, S. P. Hill, Alexander B. Hawkins, Committee.	

SECOND DIVISION.

CATTLE.

1st Class—Short Horns and Durhams.

Best Bull over 3 years old, N. Devon, S. Smith, 1st premium,	\$15
Best Bull over 2 and under 3 years, Durham, Wm. Russell, 1st premium.	10
Best Bull over 1 and under 2 years, Wm. Russell, 1st premium,	5
Best Heifer over 1 and under 2 years, Wm. Russell, 1st premium;	2
Best Cow over 3 years old, N. Devon, Dr. R. H. Mason, 1st premium,	10
Best Calf, N. Devon, S. Smith, 1st premium.	3
Best Calf 6 months old, Devon & Durham, Wm. Russell, 1st premium;	3
Best Heifer 15 months old, N. Devon, Dr. Wm. R. Holt, 1st premium,	3
Best Bull Calf 1 year old, N. Devon, Dr. Wm. R. Holt, 1st premium,	3
Best 2 year old N. Devon, Gwynn, 1st premium,	3
Best Heifer over 1 and under 2 years old, Devon, E. Hall,	3
Jas. E. Williams, H. G. Williams, A. W. Venable, Committee.	

GRADES OR MIXED BLOOD AND NATIVE CATTLE.

Best Bull, Native, 3 and a half years old, M. S. Healy, 1st premium,	\$15
Best Cow, Grade, 4 years old, Seth Jones, 1st premium,	10
L. O'B. Branch, Thomas Ruffin, R. R. Bridgers, Committee.	

WORKING OXEN.

Best pair of Work Oxen, John Hayes, 1st pre- mium,	\$10
C. L. Hinton, Thomas Miller, Committee.	

FAT CATTLE.

Best fat Ox, Dr. E. A. Cradup, 1st premium,	5
W. A. Graham, C. Graves, Bryan Grimes, Com- mittee.	

MILCH COWS.

Best Milch Cow giving not less than 20 quarts on exhibition, Seth Jones, 1st premium,	\$20
Second best Milch Cow giving not less than 15 quarts on exhibition, John Hayes, 2nd pre- mium,	10

A. W. Venable, E. J. Mumford, Committee.

THIRD DIVISION.

SHEEP.

Best Bucks, 4 years old, South Down & Leices- ter, Dr. Wm. R. Holt, 1st premium,	10
William Long, John H. Bryan, G. J. Ward, Com- mittee.	

FOURTH DIVISION.

SWINE.

First Class—Large Breed.

Best Breeding Sow over 2 years old, with not less than 4 pigs, W. T. Hopkins, 1st pre'm.	\$5
---	-----

2nd Class—Small Breed.

Best boar under 2 years old, J. C. Partridge, 1st premium,	\$5
Best sow under 2 years old, J. C. Partridge, 1st premium,	5

3rd Class—Native.

Best single fat Hog, raised in the State, S. R. Ireland, 1st premium,	\$5
Rich'd. H. Smith, L. W. Humphry, Committee.	

POULTRY.

Best pair of Shanghais, F. J. Haywood, 1st pre- mium,	\$3
Best pair Brahmas, Mrs. J. C. Partridge, 1st pre- mium.	3
Best pair Game, J. D. Newsom, 1st premium,	3
Best pair Cross-breed, E. E. Hunter, 1st pre- mium,	3
Best pair Domestic Turkeys, Mrs. Dr. Mason, 1st premium,	3
Best pair Muscovy Ducks, James McKimmon, 1st premium,	3
Best exhibition of Pigeons, F. M. Ironmonger, 1st premium,	5
Best and largest exhibition of Poultry by one exhibitor, Mrs. J. C. Partridge, 1st premium,	10
Golden and Silver Seabright Bantams, Mrs. J. C. Partridge, 1st premium,	3
Best Wild Indian Game, Thos. Greer, 1st pre'm.,	3
Thos. McIlhenny, Thomas S. Ashe, A. M. Lewis, Committee.	

FIFTH DIVISION—AGRICULTURE.

Second Class—Agricultural Productions, Raised by the
Exhibitor.

For best variety of Bread corn, T. S. Hoskins 1st premium,	\$3
Best variety of Stock, do. W. D. Jones, 1st premium,	3
Best variety of wheat, W. D. Jones,	3
Best variety of Oats, W. H. Robards, 1st pre'm.,	3
Best variety of Rye, Dr. E. A. Cradup, 1st do.	3
Best variety Field Peas, W. D. Jones, 1st do.	3
Best variety of Sweet Potatoes, Crawford Tay- lor, 1st premium,	3

Best variety of Irish Potatoes, P. R. Hines, 1st premium, 3
 Best variety of Grass Seed, John Stafford, 1st premium, 5
 Thomas Bragg, W. W. Holden, E. Hall, Committee.

DIARY.

Best jar of Fresh Butter, W. B. Williams, 1st premium, \$3
 H. H. Watters, A. B. Hawkins, S. P. Hill, Committee.

Food, Condiments, &c., from 14 to 19.

For the best specimen of the following dried fruits: Peaches, Pears, and Apples, of each not less than $\frac{1}{2}$ bushel, S. W. Westbrooks, 1st premium for each, \$2
 For the best and greatest variety of the above dried fruits made and exhibited by the same individual, S. W. Westbrooks, 1st premium, 5
 For the best specimen of Domestic Wine, not less than $\frac{1}{2}$ dozen bottles, D. W. Lewis, 1st premium, 5
 W. H. Walters, A. B. Hawkins, S. P. Hill, Committee.

FOOD, CONDIMENTS, &c., to 14.

For the best specimen of Wheat Flour, Alexander Dixon, 1st premium, \$10
 2nd best specimen of Wheat Flour, N. Price, 1st premium, 5
 For the best specimen of Corn Meal, W. F. Collins, 1st premium, 3
 A barrel of superior Flour, made from 3 $\frac{1}{2}$ bushels of White Wheat at Long Creek Mills, by S. H. Hunt, deserves notice.
 J. B. G. Rouilhac, Wm. Upchurch, M. B. Royster, Committee.

Vegetables.

For the best stalks of Egg Plants, T. E. Pender, 1st premium, \$1
 Best Pumpkins, M. Lambert, 1st premium, 1
 Best Beets, K. M. C. Williamson, 1st premium, 1
 Best Turnips, J. Kirkpatrick, 1st premium, 1
 D. W. Courts, W. A. Gwynn, Wm. W. Holden, Committee.

Branch 33—Mechanics.

MECHANICS.

First Class—Plows, &c.

For the best Side Hill Plow, W. B. Upchurch, 1st premium, \$10
 For the best double Mould Board Plough, Borum & McLean, 1st premium, 5
 For the best Cast Mould Board 1 horse Plough, W. B. Williams, 1st premium, 10
 For the best Cast Mould Board 2 Horse Plough, J. H. Gooch, 1st premium, 10
 For the best Wrought Mould Board 1 Horse Plough, R. Sinclair & Co., 1st premium, 10
 For the best Wrought Mould Board 2 Horse Plough, A. Dixon, 1st premium, 10
 For the best Toothed Harrow, W. B. Williams, 1st premium, 5
 For the best Wrought Cotton Scraper Plough, W. B. Williams, 1st premium, 10
 For the best Toothed Cultivator, R. Sinclair & Co., 1st premium, 5
 For the best Wrought Subsoil Plough, W. B. Williams, 1st premium, 10
 For the best Iron Roller, smooth, R. Sinclair & Co., 1st premium, 5

For the best Iron Roller, pegged, R. Sinclair & Co., 1st premium, 5
 For the best and greatest variety of Agricultural implements, manufactured in the State, by the exhibitor, or under his supervision, W. B. Williams, 1st premium, 25

Second Class—Farm Vehicles, &c.

For the best 2 horse Road Wagon, J. L. Woods, 1st premium, \$10
 For the best Wheelbarrow, Cobb, Hilton, & Co., 2
 Best pair of Wagon or Plow Hames, J. L. Woods, 1st premium, 2
 Best 2 horse Pleasure Carriage, Dibble & Bros., 1st premium, 25
 Best Top Buggy, Nelson and Doughty, 1st premium, 15
 Best open Buggy, Nelson and Doughty, 1st premium, 10
 Best lot of Wheel Hubs, Cobb, Hilton & Co., 1st premium, 3
 James S. Leathers, C. B. Root, R. R. Bridgers, Committee.

Third Class—Machinery.

HORSE POWER.

Best Sweep Horse Power, J. H. Cooch, 1st premium, \$15
 Best Corn and Cob Crusher, Robbins & Bibb, 15
 Best Threshing Machine, Stafford, Clark & Dixon, 1st premium, 15
 Best Broadcasting and Drilling Machine for Grain or grass, C. Burnett, 1st premium, 10
 Best Cotton Gin, J. S. Carlisle, 1st premium, 20
 Best Hay Press, R. Sinclair & Co., 1st premium, 10

HAND POWER.

Best Fanning Mill, C. Burnett, 1st premium, 5
 Best Corn Sheller, R. Sinclair & Co., 1st premium, 5
 Best Straw and Shuck Cutter, Stafford, Clark & Dixon, 1st premium, 5
 Best Smut Machine, J. A. McMannen, 1st premium, 10
 Willis Lewis, A. Brown, W. Albright, Committee.

Fourth Class—Saddlery, &c.

Best set Carriage Harness, Houston & Overly, 1st premium, \$15
 Best Ladies' Saddle, Bridle and Martingals, C. W. D. Hutchings, 1st premium, 5
 Best set 1 Horse Wagon Harness, John Sawyer & Co., 1st premium, 5
 Samuel P. Hill, H. A. Gilliam, W. H. Holderness, Committee.

CABINET WORK.

Best bedstead, Parker Rand, 1st premium, 5
 Best Spring Seat Lounge, Watson & Boothe, 1st premium, 5
 T. E. Pender, A. F. Garrett, Charles Latham, Committee.

SHOES, HATS, &c.

Best pair of Gentlemen's Boots, Henry Porter, 1st premium, \$3
 Best pair of Gentlemen's Shoes, Henry Porter, 1st premium, 2
 Best dress hat, silk or fur, G. W. & D. Gee, 1st premium, 3

Best plantation hat, G. W. & D. Gee, 1st pre'm.,	3	2 Vest shirts, Miss B. F. White, 1st premium,	1
Best ½ dozen wool hats, W. D. Andrews, 1st premium,	2	1 Shirt bosom, Miss J. McRorie, 1st premium,	1
Best straw and grass hats, Mrs. Nancy Newton, 1st premium,	3	1 Ladies basque, Mrs. C. C. Raboteau, 1st prem.	1
Best bonnet and bandbox made of hair, S. Hardy, 1st premium,	3	1 Infant's shirt, Mrs. Alley, 1st premium,	1
George T. Cooke, H. J. B. Marsh, W. D. Jones, Committee.		1 Ladies under dress, Mrs. R. H. Wynn, 1st premium,	2
		1 Embroidered collar and sleeves, Miss M. Kuhn 1st premium,	3
		1 Embroidered collar, Mrs. J. C. Partridge	dip.
		1 Embroidered collar, Miss V. C. Royster, 2d premium,	2
		1 Ladies basque, Mrs. Roulhac,	dip.
		1 Jacket, Miss Rebecca Trull, (blind) 1st prem.	2
		1 Set Architectural drawings, 1st premium,	2
		1 Bed-spread and curtains, Mrs. Kreth, 1st prem.	3
		1 Brahma down tippet, Miss Maria Partridge, 1st premium,	2
		1 Box hair do	1
		1 Map of North Carolina, W. D. Cooke, to which special attention is called.	
		3 Tides, Mrs. T. Partridge,	dip.

Fifth Class—Sundries from No. 13 to 17.

For the best and greatest variety of Mechanics Tools, made in the State, Stafford, Clark & Dixon, 1st premium,	\$10	1 Large case Papier Maché Boxes, Cabas baskets and Filagree work, H. D. Turner,	dip.
Best lot Manufactured Tobacco, chewing, Y. & E. P. Jones, 1st premium,	10	Specimen of bees wax, Mrs. J. C. Partridge,	dip.
Best box of cigars, Lash & Bro., 1st premium,	5	1 Patch work chair, Mrs. Wm. Hill, 1st prem.	3
Best box tallow candles, Mrs. Jno. C. Partridge, 1st premium,	5	1 Medicine chest and Medicines, A. O. Bradley,	dip.
J. W. Harris, L. O'B Branch, Thos. Miller, committee.		1 Box artificial teeth, Dr. Benbow, 1st prem.	3
		1 Pair work screens, Mrs. W. Lewis,	dip.
		1 Worked cushion, Mrs. Nelson,	dip.
		1 Pair Otteman covers, Miss E. C. Loyd, 1st premium,	3
		5 Oil Paintings by Prof. J. J. Evers, of Edgeworth Female College, and by Prof. Frerisch of Greensboro' Female College, are deemed entitled to a high degree of merit and are equally deserving of a first premium each	5

Fifth Class—Sundries to No. 12.

Best lot of Rifles, A. C. Ledbetter, 1st pre'm.,	\$5	2 Leather frames, Mrs. J. C. Partridge, 1st premium,	2
Best brass kettles, J. Woltering, 1st premium,	5	1 Knit cloak, Marion Johnson,	dip.
Best harness leather, Jacob Ramsour & Co., 1st premium,	5	1 Lot of Ambrotypes, T. J. Havens,	dip.
Best side of harness leather, W. F. Hulbard, 1st premium,	3	Lot of Daguerreotypes, T. J. Havens, 1st prem.	3
Best lot of Edged tools, J. Woltering, 1st pre'm.,	10	1 Child's Sack, Mrs. Roulhac, 1st premium,	2
Best turpentine and brandy Stills, Jos. Woltering, 1st premium,	5	1 Collar and cuffs, Mrs. E. Hall,	dip.
Best improved American Rifle, W. W. Clark, 1st premium,	5	1 Baby's Skirt, Miss M. Kuhn,	do.
J. W. Lewis, David Hinton, committee.		1 Case Jewelry, C. H. Thompson,	do.
		Alfred Dockery, R. A. Hamilton, W. A. Eaton, committee.	

Branch Fourth—Manufactures.*First Class—Mill Fabrics.*

Best piece Sattinette, Carson, Young & Grier, 1st premium,	\$5	Best and greatest variety of Pears, S. W. Westbrook, 1st premium,	\$5
Best piece Woollen Jeans, Carson, Young & Grier, 1st premium,	5	Best and greatest variety of Peaches, W. A. Eaton, 1st premium,	5
Best Felt blanket, W. D. Andrews, 1st pre'm.,	3	Best and greatest variety of Apple trees, Thos. Lindley, 1st premium,	5
Best piece woollen carpet, Mrs. R. A. Lewis, 1st premium,	5	Best and greatest variety of Pear trees, Thos. Lindley, 1st premium,	5
Best piece shirting and sheeting, J. Newlan & Son, 1st premium,	5	Best and greatest variety of Cherry trees, Thos. Lindley, 1st premium,	5
Best bale cotton yarn, (all numbers,) J. Newlan & Son, 1st premium,	5	Best and greatest variety of Grapes, Sexton, 1st premium,	2
John H. Leary, H. G. Spruill, Wm. Hill, committee.		2 Varieties of Pines, J. E. Taylor, 1st prem.,	2
		Pomegranates, Mrs. Ruffin Tucker,	2
		2 varieties Elberts,	2
		Marion Chasants, J. E. Taylor,	2

Second Class—Household Fabrics.

Best counterpane, Mrs. Roxana Harris, 1st pre'm.,	3	REPORT OF THE COMMITTEE ON DIS-	
Best Quilt, (cotton) Mrs. J. Y. Jones, 1st pre'm.,	5	CRETIONARY PREMIUMS.	
Best Quilt (silk) Mrs. G. W. Mordecai, 1st pre'm.,	5	1 Crochet collar, Miss Maria E. Cook, 1st pre'm.	2
Best home-made carpet, Mrs. R. A. Lewis, 1st premium,	3	1 " D'Oyley, Miss A. Sherwood, 1st pre'm.	1
Best pair home-made blankets, Mrs. Rebecca Broughton, 1st premium,	3	1 Box wax flowers, Miss Nichols, 1st premium,	3
Best hearth rug, Miss A. McRae, 1st premium,	3	1 Ladies mantilla, Mrs. E. Hall, 1st prem.,	3
Best pair home-made silk hose, Mrs. Lucy Savage, 1st premium,	2		
Best knit counterpane, Mrs. E. Cuthbert, 1st premium,	10		
Best bed spread, Mrs. B. Williams, 1st premium,	5		
Jno. P. H. Russ, C. H. K. Taylor, Wylie Perry, committee.			

Fourth Class—Horticulture.

Best and greatest variety of Pears, S. W. Westbrook, 1st premium,	\$5	REPORT OF THE COMMITTEE ON ESSAYS AND EXPERIMENT.	
Best and greatest variety of Peaches, W. A. Eaton, 1st premium,	5	The Committee on Essays and Experiments, to whom were referred the Essays on the accumulation of preparation and application of stock yard and stable manures, report:	
Best and greatest variety of Apple trees, Thos. Lindley, 1st premium,	5	That they have examined these Essays by Messrs.	
Best and greatest variety of Pear trees, Thos. Lindley, 1st premium,	5		
Best and greatest variety of Cherry trees, Thos. Lindley, 1st premium,	5		
Best and greatest variety of Grapes, Sexton, 1st premium,	2		
2 Varieties of Pines, J. E. Taylor, 1st prem.,	2		
Pomegranates, Mrs. Ruffin Tucker,	2		
2 varieties Elberts,	2		
Marion Chasants, J. E. Taylor,	2		

REPORT OF THE COMMITTEE ON DIS-
CRETIONARY PREMIUMS.

1 Crochet collar, Miss Maria E. Cook, 1st pre'm.

1 " D'Oyley, Miss A. Sherwood, 1st pre'm.

1 Box wax flowers, Miss Nichols, 1st premium,

1 Ladies mantilla, Mrs. E. Hall, 1st prem.,

R. H. Drysdale, E. L. Perkins, and J. H. Bryan, Jr., respectively; and that while they take pleasure in commending each of them, as replete with learning and information on Agricultural Chemistry and useful reflections, and deem each one worthy of publication, they award the premium to Dr. E. L. Perkins, of Sampson county, his performance being deemed to conform most nearly to the species of essay for which the premium was advertised.

Wm. A. Graham, and Thos. Bragg, committee.

Trial of speed in Trotting in Harness.—Gray Horse, Ole Bull, belonging to J. S. Ives—*Silver Cup*.

Trial of speed in Pacing in Harness.—Bay Horse, Major, belonging to J. B. Whitaker—*Silver Cup*.

A. W. Venable, J. A. Whitaker, W. H. Holderness, Thomas D. Meares, committee.

RALEIGH, N. C. NOVEMBER, 1855.

THE valuable and interesting Premium Essay sent to us for publication, from the Henderson Union Agricultural Fair, shall be published with great pleasure in our December Number.

We present to our readers to-day a rich treat in the masterly Address of Judge RUFFIN before the State Agricultural Society at the late Fair.—It will be found to be every way worthy of the occasion and of the wide spread reputation of its distinguished author.

SEVERAL editorial articles prepared for this No. of the Arator, are crowded out by the Address of Judge Ruffin and the Proceedings at the Fair. They shall appear next month.

STATE FAIR.

It is not to be disguised that the exhibitions at the late State Fair, in this city, fell far below the expectations of its friends. But this was chiefly in the scarcity of articles brought up to show. Those exhibited were generally considered of excellent quality, and some could not be beaten. The people were here, the intelligent and enterprising friends of improvement, from many parts of the State, far and near, and manifested the right spirit; but unfortunately, they forgot, (what we hope they will not do again,) to bring something to contribute to the exhibition along with them. All are convinced of their error in this respect, and will do better next time.—But the subject must be perpetually agitated. Let all resolve to do something, and keep the subject, through the press, and by personal effort, constantly before the people—and there can be no disappointment next time.

THE Editor of this paper acknowledges the receipt of three dollars, from E. J. Hale, Esq. of Fayetteville, his annual subscription, as a member of the North Carolina State Agricultural Society. Being unable to attend the Fair, Mr. Hale has shown his zeal in the cause of improvement, and his sincere desire for the success of the Fair as a grand means of advancing that cause, by sending up his annual share of the material aid required for that object; thus renewing his membership, notwithstanding he could not be personally present to participate in the proceedings, and setting an example worthy to be followed by every one placed in similar circumstances. There are hundreds of the old members who were prevented from attending; perhaps

by uncontrollable circumstances, who could pay their three dollars without the slightest inconvenience, and thus continue their membership and vitally aid the best of causes. It is hoped and expected that many of them, at least, will do so. Let them, then, when they learn what Mr. Hale has done, go and do likewise. But their letters and dues should be addressed to Mr. J. F. HUTCHINS, of this city, who is the Treasurer of the Society.

It cannot be necessary to remind the intelligent that their subscriptions were much relied upon in the financial calculations, and are necessary for the relief of those who are personally engaged in the management of the financial operations of the institution.

We call the attention of our readers to the advertisement of Messrs J. and O. Lindley, in the present number of the Arator, offering for sale a large collection of fine Fruit Trees. When it is remembered that the Messrs. Lindley have spent many years in collecting and testing the virtues of their fruits, and have proved the superior excellence of their varieties by their splendid exhibitions of fruits at the first and last State Fairs, there can be no recommendation needed to secure the confidence of the public in the fruits which they offer for sale. They beat New York, and there can be no doubt, for our climate, they beat the world. We hope these worthy and enterprising citizens will realize large sales the present season. We desire this, not only because their efforts to advance this great interest of our State deserve encouragement, but also because we sincerely believe that our agriculturists, by extending their orchards and increasing their attention to the cultivation of fruits, will increase their own comforts and prosperity as well as contribute to the general welfare and improvement of the State.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Peaches, Plums, Apricots, Nectarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford county, N. C., or to Owen Lindley, Cane Creek, Chatham county, N. C.

JOSHUA LINDLEY,
OWEN LINDLEY.

Nov. 1, 1855.

2t.

TABLE OF CONTENTS.

Agriculture, 234; Agricultural labor, increase of, 237; A new Idea, 238; Alpaca, or Peruvian Sheep, 239; An extensive farmer, 239; About Grapes, 240; Address of Hon. Thomas Ruffin, 244; Agriculture, Chemistry applied to, 225; Fowls, how to fatten, 239; Grains, 234; Ground and underground food, 237; Hon. Edward Everett's speech of, 227; Harness, how to keep, 231; Horses, bays in, 240; Josiah Quincy, farm of, 238; Important facts, 238; Meteorology for the farmers, 233; Nicholas Biddle, Address of, 236; Ploughing, 239; Premiums, list of, 252; Remarks of M. P. Waller, 232; Roasted coffee, experiments with, 236; Rusing wood, 232; Stacking wheat straw, 231; Sulphates, 233; State Agricultural Society, Proceedings of, 241; What gives value to the land of England, 236.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS,

VOL. I. RALEIGH, DECEMBER, 1855. NO. IX.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, *in advance*, or \$1.50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

From the Southern Cultivator.

WHEAT CULTURE IN THE SOUTHERN STATES.

WE rejoice to know that the cultivation of Wheat in the Southern States meets with such encouragement as is likely to make it a valuable staple in a new system of rotation of crops. It should be considered in connection with planting, with the natural and the cumulative wants of the soil, as well as the almost universal desire for Wheat bread. As an article of human food, in no part of the world have mankind voluntarily lessened their daily consumption of Wheat, because they preferred bread made of the meal of maize, rice, rye, barley, oats, or any other cereal. On the contrary, thousands of families in all the States, to say nothing of the daily bread of the masses in Europe, annually consume less meal and more Wheat flour, as their means enable them to consult their taste. On good wheat land, one can raise a bushel of wheat quite as cheaply, as one of corn; but such land is not common, and of course 100 pounds of flour costs more labor than a like quantity of meal, to most producers. If they had all the experience and skill in growing wheat which they possess in the cultivation of corn,

such an increase of knowledge would enable them to reduce the first cost of a bushel of wheat nearly one-half. This valuable knowledge will be acquired, sooner or later, for the increasing millions are sure to perpetuate an increasing market for this grain.

In Dr. Schmitz's translation of Nieburr's "Lectures on Ancient History," may be found the following remarks: (Vol. 1, p. 16) "Man was first created at Babylon; corn [wheat] there grew wild; and the new race of beings there found the first necessary food, especially wheat. This tradition is the more remarkable because several naturalists have made the observation that corn [wheat] does not grow wild in any part of the world. I do not know whether by a process of improvement our garden fruits can be derived from wild fruit; it is well known, however, that the noble Vine Grapes grow wild in Colchis. Whence, then, does Corn come? My opinion is that God made direct provision for man; something was given to all, real Wheat to the Asiatics, and Maize to the Americans."

We cite the above, not so much to record in these pages the "opinion" of so ripe a scholar and so careful an observer as Nieburr, in reference to "the direct provision made for man" by his Creator, as to indicate the fact that the warm valley of the Euphrates, if not that of the Nile, is the earliest known habitat of the plant under consideration. The fact that Egypt has been able to feed indefinite millions at home on wheat, and export a large surplus for three thousand years, proves that our southern climate should be at least as friendly to the cultivation and growth of this grain as any north of us, so far

as temperature effects the crop. The uncertainty of getting timely rains is, probably, the most serious impediment and risk encountered by the Southern Wheat grower. He has not the waters of the Nile nor of the Euphrates to irrigate his land when it suffers from protracted dry weather. If a kind Providence sends him fruitful seasons he is grateful for the same; but when the "early and latter rains" fall, he has no remedy. There is, however, as good a chance for wheat as for corn or cotton, and perhaps a better one than for either, as wheat is ripe in May, and some months in advance of cotton and corn. Wheat is liable to injury by insects and parasitic plants; but not more so than corn and cotton.

Not to dwell on hazards and casualties which are too numerous and important not to be named, we remark that every one who sows wheat should see that the land is *well prepared for the seed*. Defective ploughing will certainly tell against the harvest.—The most common defects in ploughing are: 1st, leaving a part of the soil unbroken; 2d, not stirring it to a sufficient depth, and 3d, not killing grass, weeds, bushes, and other hostile plants which, growing, absorb much of the strength of the earth.—Foul wheat fields are rarely, if ever, profitable.—There are soils which it is unwise to plow deeply immediately before seeding, for the subsoil is naturally sour, or lifeless, and can only be ameliorated by many months exposure to the sun, rain, and gases, after they have been ploughed. Liming generally hastens the improvement of such lands; but whether limed or not, they ought to be thoroughly pulverized to the depth of several inches. A good seed bed is not to be dispensed with by any who intend to deserve a fair crop; and what constitutes a good bed for wheat few cultivators need be informed. In strong land, it should be mellowed by the implements of tillage at least eight inches; and 12 would be still better.

Next in importance to thorough cultivation is manuring. By the liberal use of manure, English farmers have raised the average yield of wheat, in the last thirty years, from 15 to nearly 30 bushels per acre. In the making of manure, a system of plant-rotation, including renovating crops, has many advantages. It develops all the latent elements of fertility by subjecting the soil to the recuperative powers; 1st, of all natural agencies; 2d, of the best culture, and 3d, of such plants as draw largely on the atmosphere or subsoil, or both for their nourishment.

Whatever manure one may have, either domestic or imported, should be thoroughly incorporated with the tilled earth before seeding. In this way, every root and rootlet of growing wheat finds its appropriate food within its reach, and the young plants

tiller and spread till the ground is fully covered, and bears its maximum of grain. Speaking of the best cultivated forty acres in Great Britain, the last number of the *London Agricultural Gazette* says that besides keeping *forty-eight* cows, that part of the farm cultivated in wheat yields "eighty-five bushels per Scotch acre." In the same leading article the editor makes the following pregnant suggestions: "Fertility is, in fact, no mere function or quality of soil; it is capable of *quantitative* estimation, and is directly due to the *quantity* of fertilizing matter present.

Every lover of the soil should sow and plant with a clear appreciation of the *things*, and their whereabouts, which are to form his expected crop. If the land needs manure, cease not to study and labor to obtain a due quantity of this raw material for making grain. Two hundred pounds of Peruvian guano is a fair allowance per acre in this country; although three and four hundred are not unfrequently used in England.

It is important to cover seed wheat at a uniform depth, which cannot be done with a common harrow so well as with a wheat drill, or the plow. In the Genesee country they use wheeled cultivators and gang-plows for putting in seed. For twenty years, the use of small plows for putting in wheat, in place of harrows, has been steadily on the increase. The ground is well harrowed before the seed is sown.—Some sow on the furrows, after plowing; and by drawing the harrow across the furrows, the seed is mainly thrown and covered between them, and comes up in rows like drilled wheat. To enable the roots of young plants to take a firmer hold of earth, and prevent their drying in dry weather, it is wise to roll the ground immediately after seeding. It is apt to be too light and open, if not compressed by the roller.

Many valuable experiments have been tried to ascertain the right quantity of seed to put upon an acre. Planted in drills and hand hoed like corn, six to eight pints of wheat to the acre have given the best returns. A gallon of good seed, properly distributed will make plants enough for an acre; but as there is some difficulty in this, from 4 to 8 gallons are the safer quantity to put on an acre. Mr. Mechi, of England, uses a bushel, or eight gallons; another cultivator claims that his crop will exceed all others when harvested, with only *six pints* of seed per acre. Hitherto, English farmers have been famous for the vast amount of seed sown upon a given area; some applying five and six bushels of oats and barley, and three or four of wheat per acre. During the reaction, it is natural that many should go into the opposite extreme.

To prevent smut, all seed should be steeped three or four hours, and not longer, in a brine made of

common salt, or in copperas water, or a solution of blue stone, (sulphate of copper.) By keeping seed too long in these powerful salts, we have seen the germs of wheat killed, to the serious injury of the crop.

We think quite as good results are attained by washing seed in a solution of common salt as in blue vitriol, or green vitriol. Either will destroy the living principle in all parasitic plants that infest the seeds of cereals.

In selecting seed, the writer may remark that he has grown over fifty varieties of wheat, and regards the "improved white flint" as the best, all things considered. That advertised in this and former numbers of the *Cultivator* by Mr. P. H. Greene, of La Grange, Ga., appears, from a sample sent to us, to be an acclimated variety of the white flint, and doubtless deserves the commendations which it has received at several Agricultural Fairs. It is well to change one's seed occasionally; *i. e.*, procure wheat grown on a different, and if possible, a better soil. All things having life are endowed with certain constitutional powers, which are subject to deterioration, and may be weak or strong, healthy or unhealthy, according to the circumstances with which they are surrounded. Where one has both the best of wheat land and the best of seed, he can gain nothing by changing either. Few, however, are so well off; and all should try to improve their system of tillage and husbandry. A pea crop ploughed in, will generally aid in giving a better crop of wheat. Wood ashes spread over the ground in any quantity from 25 to 100 bushels per acre are valuable to strengthen the soil.

L.

From the Southern Cultivator.

MR. AXT'S GRAPES—GEORGIA VINEYARDS—SOUTHERN WINE.

In our September number of the year 1853, (page 239) we briefly adverted to the beginning of what we must consider the Grape Growing and Wine making era of Georgia; and it now affords us peculiar pleasure to record the progress already made, and the future promise of the enterprise.

As we then stated, Mr. Charles Axt, (a native of the Vine Growing District of the Rhine,) profoundly impressed with the peculiar fitness of our soils and climate for the growth of the Grape and Wine making, eagerly sought to enlist our people in the enterprise. At first he made very slow progress.—It was almost a new business—it had never been well tested—our people did not understand it, and Mr. Axt's then imperfect knowledge of our language, precluded anything like a free communication of the information which he evidently possessed. For two

or three years, (from 1850 to 1853) he met with very little encouragement, and a man less sanguine and persevering, would have given up in despair. Not so, Mr. Axt, however—he knew he was right—and he pressed steadily onward.

The results of his efforts thus far, are most gratifying and encouraging. He has now quite a number of very promising young vineyards in Middle and Cherokee Georgia, Alabama and South Carolina; and it is only necessary that planters of taste and intelligence should be made aware of the main features of his system, and witness some of the results, to arouse among them a very general interest in the subject. With the view of imparting what we know of Mr. A.'s operations thus far, we will briefly state what we witnessed at the

Vineyard of Dr. W. Q. Anderson.

This experimental vineyard of Dr. A., is located at his dwelling, 7 miles from Washington, Wilkes County, Ga. It is on the summit of a slight elevation—the surface soil of a dry, gravelly nature, and the subsoil a red clay. In the winter of 1853, one-quarter of an acre was thoroughly *trenched*, two-spades deep, and 500 cuttings of the Catawba Grape were planted in 7 foot rows, cuttings $3\frac{1}{2}$ feet apart in the rows. The cuttings of Mr. Axt are very long, (18 to 24 inches) and the ground must be thoroughly broken and pulverized, in order that they can be easily pushed down so deep that only one eye is left above the surface. Of the 500 cuttings first planted for Dr. Anderson, only about 140 survived the late frost and drouth, and these 140 vines now constitute the Doctor's experimental vineyard.

We visited this vineyard on the 23d of August, in company with Mr. Axt, Hon. M. A. Cooper, of Cass, Mr. Bacon, of Troup, and M. P. Calloway, Esq., of Wilkes; and we are confident that the general feeling of the party was that of most agreeable surprise. The vines, which were trained to plain wooden horizontal supports, were literally laden with heavy, blushing clusters of the most beautiful and poetical of all fruits—the bloom covered Grape—and the fine, strong, bearing-canec, huge, healthy leaves, and large, sound bunches, with no sign of rot or mildew, all proved conclusively the benefits of deep culture and proper training. We counted the number of clusters on several vines, and found an average of over 40 on each. According to the estimate of Mr. Axt, forty such clusters will produce at least a gallon of wine—so that the quarter acre of Dr. A., with scarce one-third of a fair stand of vines will produce 140 gallons of wine the present season. The proper number of vines for an acre, on Mr. Axt's plan, is sixteen hundred; and that number of gallon (19000) of wine, may we think, be

safely counted on from an acre of properly managed vines, the third year. With good care, the yield will increase thereafter, from year to year; and Mr. Axt has no hesitation in pledging himself to produce twenty-five hundred (2500) gallons of good wine from an acre of vines, the fifth year after planting. Estimating this wine at the lowest possible figure (\$1 per gallon) and allowing only one half of Mr. Axt's estimate (1250 gallons) we have \$1250 for the production of one acre of ground, in one season—a result not often attained in the regular routine of Cotton and Corn planting!

We have no desire to put "too fine a point" upon this matter, or in the least degree to mislead our readers. Neither do we believe in any "royal roads" to fortune. We merely tell what we saw, and give our own impressions of the matter. We desire to see some portion of the capital, and much of the taste and skill of our country diverted from the old time-worn track that leads to the everlasting and omnipotent cotton-bag; and, to that end, stand ready to encourage any enterprise which will give our planters and their poor, worn lands more time for rest and improvement. The culture of the Grape and the making of Wine promises to do this; and also to prove a most efficient auxiliary to the cause of temperance, sobriety and good morals,* and it, therefore, has our heartiest good wishes and co-operation. We hope to live long enough to see the old "washed" and "gullied" hill sides of Georgia and the neighboring States, yielding tons of luscious Grapes and hogsheds of pure and invigorating Wine. The vine fairly revels in this climate—it adapts itself readily to almost every variety of soil, and with proper skill in planting and training will succeed anywhere in the South. All that is necessary is to start right—the main expense being the preparation of the ground. Mr. Axt is making arrangements to procure experienced vine dressers to aid him in his business, and where sufficient encouragement is offered him by individuals or companies, he will assume full charge of their vineyards from the trenching of the ground to the bottling of the wine. His terms are by no means unreasonable, and those who desire to negotiate with him, may do so through the editors of this journal, or by addressing him at Washington, Wilkes County, Georgia.

Had we time and space, we would gladly go into more particular details of this very interesting sub-

*It is universally conceded that the inhabitants of wine making districts are remarkably free from the drunkenness so prevalent in countries where distilled alcoholic liquors are in common use; and the united testimony of physicians and physiologists goes to prove that pure wine, in moderate quantities, may in most cases, be drunk with positive benefit.

ject; but we are obliged to leave it for the present, with the promise of returning to it hereafter, at an early day. The various articles on Grape culture in course of publication, will, we trust, have a tendency to arouse an increased interest in the enterprise. It only needs a fair investigation to convince all intelligent men of its success and profit.

P. S. Since writing the above, we have had the pleasure of meeting Mr. Axt at the Atlanta Fair, where he exhibited two large baskets full of his unrivalled Catawba Grapes, and freely shared them with many visitors, who will gladly testify to their excellence. The new President of the Society, (Hon. Mark A. Cooper,) in his opening Address, commended the enterprise to public attention in very strong terms; and the Committee on Fruit, as will be seen elsewhere, signified their appreciation of Mr. A.'s efforts by a most favorable report, and the award of a Silver Pitcher.

Mr. Axt has now several hundred gallons of Catawba Wine in preparation, and connoisseurs will soon have an opportunity of comparing it with the new crop of Longworth, and other vinters, native and foreign. We shall carefully note the progress of this last stage of the enterprise, and inform our readers of the result.

WHEAT AND WEVIL.—At this particular time, when the united hosts of speculators have combined to rob the honest farmer of the just earnings of his labor, it may not be generally known that wheat may be threshed out, cleaned, put away in the barn, and given a pretty thick covering of pine leaves, (more commonly known as pine tags) and it will remain in this state for years, entirely exempt from that great enemy, Wevil. Of course the wheat should be bulked in a dry state, and after covering with the pine tags, it will be kept cool and free from danger.

The above information was obtained some years since from Mr. James B. Cocke, of Prince George County, Va., an experienced farmer, who, by means of the pine tags, as above, has been enabled to keep his crop of wheat in a complete state of preservation for years; this being also the experience of a

SURREY FARMER.

[in South Side Democrat.]

Smoking Hams, &c.—Be careful not to have the fire too high, or the smoke-house too tight. It is best done in an upper story to which the smoke is conveyed in tubes, from oak or maple chips in the cellar. In passing this distance, the vapor which smoke usually holds, is deposited, and the hams are perfectly dry and cool during the whole process.

From the Southern Cultivator.

NATIVE GRAPES—LETTER FROM DR. MC-DONALD.

EDITORS SOUTHERN CULTIVATOR—In your August number I read the communication signed "J. S. G." requesting information with regard to the cultivation of the Grape and of the kinds best adapted to the South, with an editorial referring directly to me, requesting that I would respond to the wishes of "our correspondent and many others who desire information on this subject." I may not refuse the call, and will, with due brevity, afford all necessary information (omitting for the present the culture of the Grape.) I will confine my remarks to those species of the Grape which have been most generally under my observation. This would be best understood by stating the kind cultivated in my vineyard, to-wit:

The *Isabella*, of which I have two or three varieties, yields an abundance of beautiful fruit, when they do not rot. This year one-half of the crop was destroyed by that disease. Whether the rot is caused by insects or simply by adverse changes in the weather, is unknown; but the fact is so, that vines adjoining each other in the same row will be affected differently—the one will have its fruit destroyed, and the other not. Again, sometimes the branches on one side of the same vine will have its fruit rotted and the fruit on the opposite branches continue sound—in other cases, one part of a bunch will rot and the rest of the grains on the same bunch will remain perfect to maturity. All this looks like the work of insects, and not to the effect of certain soils or even changes of the weather, although the last may be necessary to the development of certain animalcula and their propagation. The *Isabella* makes a fine claret.

The *Warren* Grape is a much more luxuriant grower, and a greater bearer than the *Isabella*, the bunches are large and the berries of medium size, with little or no pulp. It makes a fine wine, the flavor being between Port and Sherry; but it also suffers from the rot. The rot occurred in the *Warren* Grape on the 10th of June, and passed off in five or six days with the loss of a fourth or perhaps a third of its fruit, whilst the *Isabella* was but slightly touched; and yet later on the 16th of July, it recurred in the *Isabella*, and swept off one-half of its fruit, but did not reappear in the *Warren*.

The *Burgundy* Grape bears the largest bunches of the three, and the fruit is the sweetest of all these grapes. The grains are of medium size, free of pulp, the bunches sometimes weighing a pound. It does not rot, but is very much injured by bees and wasps, the skin being so thin that they prefer it to

all others. It does not have as much fruit as the *Warren*, and requires four years to come into bearing. It makes a fine rich wine, quite superior to the *Warren*.

The *Blue Grape*, or, as it has been termed by some, the "Black July," is a poor bearer, and, though it does not rot, it is very much destroyed by birds. It makes a wine similar to Port. It is a native of North Carolina.

I have two varieties of *Rose Grapes*. One has been called the *Bland's Maderia*, but whether that is its proper name, I have not been able to satisfy myself, as hitherto I paid but little attention to it; but this year I have noticed that it is an abundant bearer of large berries, pale red and fair sized bunches, free from rot. I have not made wine of it, but will do so this year.

The *Catawba*, I am little acquainted with. Among a variety of native vines from North Carolina, I imported a *Catawba* from Dr. Weller. Those *Catawba* vines are now in full bearing and free from rot, and are identical in the appearance of the wood, stalk and leaf with the 1000 vines which I obtained (through the polite attention of R. Buchanan, Esq., of Cincinnati) from the Nursery of Kelly, Evans & Co., of Cincinnati, Ohio. They are free from rot with me, but they occasionally rot in Ohio.

The *Scuppernon* vines occupy a separate vineyard of four or five acres, planted ten by twenty feet.—They are not liable to spring frosts, as they bloom very late, but a cold change will at the early formation of fruit cause the grains to shed off. The crop of these will be very light this year, in consequence of the cool nights in June. The fruit of this grape has a peculiar rich aroma, but it will not make a good wine without the addition of sugar. The wine, when thus made, is of the quality of Champagne.

The *Herbemont*, it seems, is amongst my collection, but its culture was not extended, as it came to me from a Nursery in New York, under the name of "Guignard," and again as the "Red Hamburg." The culture was not extended as the fruit was not as sweet as others; some few vines, however, got scattered in the vineyard, and the originals continued to grow, when a friend of mine who knew the *Herbemont* enlightened me as to its real name. There is more fruit on one of those vines than on any other in the vineyard, and not a particle of rot about them. I have Mr. N. Longworth's authority for saying that it makes a pleasant wine like the Spanish Manzanilla.

Now that my basket of Grapes has been freely presented to your "correspondent and others," I think that they can make a fair selection. For myself, I must confess that I like them all. And al-

though I have a great many French Grape Vines in bearing, I would not exchange the most indifferent of the former for the best of the latter, for open culture.

The culture of the Grape and the making of Wines in the primitive style, without any addition of foreign matter to the *pure juice*, may form another article, when more at leisure. Respectfully, &c.

JAS. C. W. McDONNALL, M D.

Woodward, S. C., August, 1855.

— From the Southern Cultivator.

A NEW RHODODENDRON.

EDITORS SOUTHERN CULTIVATOR—I send you a drawing of a flowering evergreen shrub, recently discovered on some of the mountains in Macon County, North Carolina, which, in point of beauty and magnificence, is second only to *Magnolia Grandiflora*.

It is a nameless and undescribed variety of *Rhododendron*; there is, however, a traditionary account of its discovery some 60 years since, by a botanist by the name of Fraser, then exploring this country, under the patronage of the then Emperor Paul, of Russia. *Fraser died suddenly on his return to St. Petersburg, which, probably, is the cause of an account of it never having been published.

The annual burning of the forest in which it grows, usually destroys it so that it is extremely difficult to find a specimen of it. Some four or five years since, however, S. McDowell, Esq., of Franklin, Macon Co., North Carolina, re-discovered this truly gorgeous plant, and for a year or two past has been engaged in propagating them, by removing the plants to his garden near that place. The shrub grows to the height of 4 or 5 feet and is of easy cultivation; the foliage is larger and more rich than that of the Pontic varieties with which we have compared it; the panicles of flowers, too, are larger and more brilliant in color. Mr. McDowell sent us a box of the flowers in June, which we compared with those of *Ponticum*, which we fortunately then had in bloom, and which were inferior to it in all respects. The foliage also differs from it, being larger and heavier, having golden yellow foot stalks and mid-rib, the peduncles to the flowers being likewise of the same color, whilst those of *Ponticum* are green; the under surface of the leaves are nearly white and of a velvety texture, differing from *R. Maximum* and *R. Catawbiense* in not becoming ferruginous. No native American flower can exceed it in habit and beauty, and it must become a popular acquisition to the shrubbery and flower garden, being sufficiently hardy to endure any climate. Its color is a bright crimson approaching towards scarlet: the panicles are composed of a large number of flowers, from 20 to

30, forming a conical mass nearly as large as a man's head; the contrast between these and its dark green foliage is very rich and magnificent, and can only be conceived of by being seen.

The labors of Mr. McDowell have been both arduous and unremitting in transferring these plants to his grounds, as they have only been found on the tops of the highest and most inaccessible mountains—the only approach being on foot; he has employed men to bring them some 6 or 7 miles on their shoulders, it being the only mode of conveyance practicable. Specimens of flowers and leaves have been sent to many of our most celebrated Botanists and cultivators of *Rhododendrons*, and, as yet, all have failed to identify it with any previously known, and it will probably prove to be a new species.

We hope the industry and labors of Mr. McDowell may meet with a suitable reward in the sale of his noble plant; and those who procure them, we will guarantee, will never regret having done so.

J. VAN BUREN.

* *Clarksville, Ga., August, 1855.*

N. B.—The drawing I send you is a fac simile of a medium sized panicle of flowers sent me by Mr. McDowell.

J. V. B.

THE TOMATO.—T. Jefferson Randolph, in an address before the Agricultural Society of Albemarle County, Va., lately delivered, stated that Mr. Jefferson could recollect when the Tomato was cultivated as an ornament to the flower gardens, called love apple, and deemed poisonous. It was eaten by one individual, a foreigner, whose peculiar constitution, or the formation of whose stomach was supposed to resist its deleterious effects!

PROFIT OF UNDERDRAINING.—Mr. Wm. Chamberlain, of Lower Red Hook, N. Y., drained 25 acres of land, at an expense of \$60 per acre, and the first three crops paid the whole expense, including cost of cultivation. He may then hereafter look for a profit of \$20 per acre on each crop. Last season part of his ground yielded 75 bushels of corn, and a part 300 bushels of potatoes, while on adjacent undrained fields the crops were nearly ruined by the drought.

PEACHES FROM CUTTINGS.—A gentleman of this city, has presented us with a sample of peaches, raised in his garden from cuttings planted in the autumn of 1851. They are of large size and remarkably fine flavor, and determine, most satisfactorily, a matter which has been disputed, that peaches can be raised from cuttings.—*Charleston Mercury*, August 30, 1855.

STOCK.

Treat Domestic Animals kindly and tenderly.

DOMESTIC animals of all kinds, from a horse down to a chicken, should be treated with gentleness and mildness; men or boys who are rash and bad-tempered, ought not to be permitted to have charge of them or to interfere with their management. Animals that are kept in constant fear of suffering never thrive well, and they often become vicious and intractable by unkind and cruel treatment.

Keep Stock in good condition.

An animal may be kept short of food in the latter part of the fall or first of winter, at a small saving of food, but at a loss in the condition of the animal. It is like salting a hog with a pound of salt—a saving of salt but *loss of bacon*. One dollar saved by short keeping of animals, will be a loss of five dollars. It will cost more through the winter, and the profit from the animals, either in growth or milk, will be lost.

Provide comfortable sheds and stables. Remember that a *want of comfort is always a waste of flesh*. Give a sufficiency of food and drink, with great regularity. A meal ten minutes later than the usual time, causes the animal to fret, and fretting lessens flesh. Most animals will drink several times a day, and should therefore have it as often as they want it. They should have plenty of clean litter as often as needed. With such management there will be an almost incredible saving of food.

Tight Stables should always be ventilated. The breath and manure from animals always causes impure air.

Coarse hay and straw are readily eaten by cattle, when brine is sprinkled upon them.

Cornstalk fodder should always be cut or chopped—otherwise the body of the stalk is wasted.—This is the best part. It is sweetest and most nutritious. And it is the chief part in bulk. Chop it fine, and cattle will eat it, if the fodder has been well cured.

Quantity.—An acre of cornstalks, cut and well secured, and chopped when fed, is quite as good as an acre of hay.

Currying.—Nothing contributes more to the health and appearance of cattle, than frequent curryings and rubbings; and nothing enjoys currying more, or shows greater improvement from it than hogs.

Hoven Cattle.—A band of straw, the size of the wrist, placed in the mouth, drawing it tight, and

making fast the ends over the head, just behind the horns, will cause the beast to endeavor to rid itself by chewing the band; and the act of moving the tongue and jaws will permit the pent-up air to escape.

Over-Feeding.—Administer a pint of eider and half a pound of old cheese, grated and mixed.

Remarks on Neat Cattle.

1. The head small and clean, to lessen the quantity of offal.
2. The neck thin and clean.
3. The carcass large, the chest deep, and the bosom broad, with the ribs standing out full from the spine.
4. The shoulders should be light of bone, and round off at the lower point.
5. The back ought to be wide and level throughout; the quarters long, the thighs thin, and standing narrow at the round bone; the udder large when full, but thin and loose when empty—with large dug veins, and long elastic teats.
6. The bones, in general, light and clean.

To Select.—Adopt the practice of selecting best lambs every year, for stock. In a few years you have first-rate sheep. The same course will produce the same effects in every kind of animal.

THE HORSE.

THERE is no more danger of injury to the horse than to ourselves by eating a hearty meal when warm. And who ever heard of a man killing himself with a hearty dinner, because he ate it when he was fatigued or heated!

It is hard driving immediately after eating grain that kills the horse. Not an instance can be shown in which he has sustained injury from eating grain merely because he was warm.

We have known men, prudent in most matters, yet guilty of stuffing their horses with grain in the morning just before starting on a journey.

How absurd to let your horse stand for hours, after a violent exercise, to chop up his own fodder and attempt to appease his hunger on hay.

Give the horse half a bushel of oats or one peck of corn—if he has been used to grain—as soon as you lead him in the stable, and he will fill himself in an hour or two, and be willing to lie down and enjoy a nap, even before you retire to rest yourself.

In any part of the country, if you see the grain put into the manger you may be pretty sure the hostler has not forgotten his duty.

Watering.—If you ride moderately, you ought to let your horse drink at any time on the way;—but if he has been long without water, and is hot,

a load of cold water, greedily swallowed, will chill and deaden the tone of the stomach: but two or three swallows are really necessary to cool his mouth, and may be allowed him at any time.

Sparins are seldom cured: though cures are made by ——Rigler, at Frankford, Pa.

Heaves.—Mix ashes in his food, and lime water for his drink.

Prevent Botts by cleanliness, and giving salt often and regularly; and, occasionally, a few potatoes.

When your animal has fever, nature would dictate that all stimulating articles of diet or medicine should be avoided. Bleeding may be necessary to reduce the force of the circulation—purging to remove irritating substances from the bowels, moist, light, and easily digested food, that his weakened digestion may not be oppressed—cool drinks, to allay his thirst, and, to some extent, compensate for diminished secretions—rest and quiet, to prevent undue excitement in his system, —but nothing to be done without a reason. We might sum all in one general direction: *Treat your brutes like men.*

Cuts should be cleaned, laid smooth in the natural position, and allowed time to cure.

Sores, when large, should be protected from the air and external irritation.

Bruises and Sprains should be kept quiet, or inflammation will ensue: endeavor to reduce the heat, if more than natural, and avoid the certain 'cure-alls.'

Colic.—The horse rolls and is in pain. Administer a table-spoonful of strong mustard, dissolved in a black or junk bottle of water. Wrap the neck of the bottle with twine, to prevent its breaking. If inflammation is suspected breathe a vein.

A *damp stable* produces more evil than a damp house; it is there we expect to find horses with bad eyes, coughs, greasy heels, swelled legs, mange and a long, rough, dry, staring coat, which no grooming can cure.

Lock-Jaw.—Throw two or three hogsheds of water on the spine. The skin becomes loose, then wrap in blankets—feed with gruel and nourishing diet.

Botts are said to be too deeply buried in the mucous coat of the stomach, for any medicine that can be safely administered, to affect them. *Symptoms.*—The horse hangs his head, is drowsy, and bites himself. Try a mixture of molasses and warm fresh milk, and rub externally with spirits of

turpentine; all of which may loose the botts—then work them off with a large dose or two of oil.

Lampas (the roof) sometimes grow level with the front teeth, and impede the feeding. Touch with a lancet gently, and allow to bleed freely, instead of the usual painful cure of burning.

Age.—From 5, black cavity, like the eye of a bean, in two middle teeth, of lower jaw, is filled up. At 6, the two second are filled up, and at 7 until 8, the black marks of corner teeth of lower jaw fill up and disappear, and the tushes are no longer concave on the surface next the tongue, but become round or convex. The marks being now obliterated, the age cannot be exactly known;—though extreme length of upper fore teeth, their yellow or brownish color and projecting over the under teeth, disappearing of bars in the mouth, and sinking in of the eye-pits, are proofs of great age.

Ring Bones.—Blister of oil turpentine 1 oz., to which add, slowly, vitriolic acid two and a half drachms, lard 4 oz., powdered Spanish flies one ounce and a half. Mix.

Sparins.—Blister, same as Ring Bone, adding oil of origanum half an ounce. Apply. First fire the part.

Sand Cracks, owing to excessive dryness of the crust. Moisten in stable, or turn him out into moist ground.

Verdigris is useful in some cases of soreness or inflammation of the foot.

Corns.—Remove the shoe and cut out the corn. Tack on the shoe after applying some tow dipped in tar.

The *Frog* should never be cut away, nor raised by the shoe above pressure with the ground, as it then loses its function of expanding the quarters of the foot, and will also become diseased.

Canker.—Cut the diseased part away; apply each day a fresh liniment of oil of turpentine 1½ oz., sulphuric acid ½ oz., mix slowly; tar 3 oz.—Pressure is one of the best remedies.

Shoes should nowhere be in contact with the horny sole.

Pole Evil.—Open and apply ointment, hot, of oil of turpentine 1 oz., verdigris ½ oz., yellow resin 3 oz.; mix. After the disease is destroyed, dress as a common abscess.

Staggers produced by too high feeding and little exercise. Bleed largely and give aloes 7 drachms, Castile soap 2 drachms, water 1 pint; mix at one draught.

Cropping or Docking manifests a want of feeling and a want of taste, which should subject the

operator to the loss of a finger by the same useless and dangerous process.

Glanders is so difficult of cure as to require a surgeon, and is so fatal and contagious that he should by no means be allowed to go into the neighborhood of other horses, nor feed from the same bucket or rack, nor use the same harness.—Symptoms are, discharge at the nose, and swelling of glands, under the throat. Soon as removed, purify the stall by lime, washing, &c.

Strangles.—Inflammation of under jaw glands, with cough. Give, once a day, Fever Powder, viz., antimonial powder 5 drachms, camphor 2 drachms. Mix for three doses.

Change from grass to hot stable is injurious.

Chronic Cough.—Blister throat, keep moderately warm, regular exercise, and each day tartarized antimony $1\frac{1}{2}$ dr., aloes $1\frac{1}{2}$ dr., Castile soap $1\frac{1}{2}$ dr. Syrup to form ball.

Fever.—Bleed. Give pint Castor oil, keep moderately warm, feed warm bran mash, and administer, once or twice a day, this Fever Powder: camphor 1 dr., antimonial powder 2½ dr. Mix.

Excessive Purgings creates inflammation and is highly pernicious. Give opium, ½ drachm, twice a day. Rub well, keep warm and perfectly quiet.—If necessary, blister, and rub with turpentine.

Jaundice.—Give, daily, opium 1 drachm, calomel 1 drachm, and syrup to form a ball.

Diabetes.—Give animal food, at first as broth, until he will feed upon flesh, and omit vegetables and all fluids as far as possible.

The Mange is occasioned by low feeding, want of cleanliness, or by contagion. Rub with oil turpentine 2 oz., sulphur vivum 3 oz., lard 5 oz., mixed.

Wind Galls about the fetlock are from hard labor. Cure by blisters and repose.

Saddle Galls.—Apply cold water, sugar of lead, and water or vinegar.

Brandy and Salt, two-thirds brandy and one-third salt, good for all kinds of galls, wounds bruises, and inflammatory sores.

S H E E P .

Lobelia (or Indian tobacco) has been found good there. The symptoms of disease are a drooping, unning at the eyes, weakness in the back and loins, and losing the use of their hind legs, &c.

Foul Noses.—Dip a small mop on the end of a stick in tar, then roll it in salt, and hold it in your sheep's mouth.

Tar.—During the season of grazing, give tar, at the rate of a gill a day for every twenty sheep.—sprinkle a little fine salt over it. This promotes their general health.

COWS.

Currying.—Cattle are well known to thrive much better where this operation is thoroughly performed, and Dr. B. Rush, in a lecture upon the advantages of studying the diseases of domestic animals, states that there is an improvement in the quality of the milk, and an increase of its quantity, which are obtained by currying the cow.

Be assured by experience of the truth of the saying, that "one cow, well milked, is worth two, badly milked."

Curing, from three acres of grass, cut and fed thirty milk cows with 28 lbs each day, for 200 days. Their health was excellent, and their milk superior.

Milk clean.—The first drawn milk contains only 5, the second 8, and the fifth 17 per cent. of cream.

Kicking.—If the milker will keep his nails short, not one cow in a hundred will kick.

Sores.—An ointment made of linseed oil and white lead will cure cracked teats.

Drink.—Those who wish their cows to give large messes of milk in the winter season, should give them warm drink. The extra trouble will be more than repaid in the increased quantity of milk.

In milking, be kind and soothing: the cow will give down her milk more freely.

Cream.—Do not milk so far from the dairy as to let the milk cool before it is put in the creaming dishes.

O X E N .

Being well-mated, oxen are more easily trained; and the more easily to effect this, much self-denial on the part of the driver, much coolness of temper, more training by motion and less by voice, may be highly advantageous to man and beast.

H O G S .

Food.—If pumpkins, roots, apples, or any of them be fed to fattening hogs with corn, the advantage will be salutary. Most of the food for swine should be cooked. Swine fatten much faster on fermented, than on unfermented food. Salt, charcoal, and once in a while sulphur, are excellent for hogs under all circumstances.

Good Medicine.—When your hogs get sick, you know not of what, give them ears of corn, first dipped in tar, and then rolled in sulphur.

A Fact.—The first litter of pigs from a young sow are naturally feeble and difficult to raise, and never perhaps acquire the size and weight that litters of the same sow do afterwards.

PREMIUM ESSAY ON CORN.

We have been politely furnished, by R. A. HAMMERTON, Esq., President of the Granville Agricultural Society; Dr. R. C. PRITCHARD, President of the Warren Agricultural Society, and Col. Jos. A. WHITAKER, President of the Franklin Agricultural Society, with the following valuable Premium Essay, by Dr. S. G. WARD, of Warren, submitted at the Union Agricultural Fair in Henderson on the 10th of October last. The public spirited Societies, at whose heads stand these intelligent and patriotic gentlemen, united in holding that fair, and we cannot but feel gratified that they have made our paper the vehicle of presenting this important Essay to the public. We hope our readers will study it carefully and profit by the wholesome instruction with which it abounds.

THE PREMIUM ESSAY,

ON THE PREPARATION OF LANDS—THE BEST MODE OF CULTIVATING CORN, AND SAVING FODDER.

Published by order of the Presidents of the Granville, Warren and Franklin Agricultural Societies.

ALL stiff, stubble, and soddy lands, intended for corn, should be subsoiled at least 8 inches deep, the previous fall, or in early winter: immediately after which, it should be horizontalized with ditches, having sufficient fall for the rains to keep them open—if the soil is not too subject to gully; and likewise to drain the land of a superfluity of water; so as to enable the action of the elements to disintegrate, and fertilize the soil, as well as to kill the eggs of worms and insects during winter.

Just before planting, the land should be laid off into rows, with a bull-tongue plow, 5 feet apart, perfectly horizontal, for the purpose of retaining the light showers of rain; permitting as many of them as practicable to empty into the upper side of the ditches, in order to part with the heavy ones. Then it should receive broadcast, at least 200 lbs. of Peruvian Guano to the acre—or as much bone dust, stable, hogpen, or compost manure, as will enable the land to produce an abundant crop of corn—if it is not rich; as it is impossible for it to yield corn without its component elements are present, or put into the soil. Twenty-five per cent. of Plaster Paris, or fresh Charcoal pulverized, will fix the ammonia in the guano, and stable manure likewise, (if it is not permitted to escape by its accustomed exposure to rain and heat,) and render them vastly more productive and permanent; and as much ashes, or lime should be added in forming the compost.

While the fertilizer is being cast on the land, it should be bedded with the largest size single horse,

(approved) cast plow, that *turns well*; and then run the plow up and down in the water furrow, taking from the ridge on either side, enough earth to form a soft bed for the corn, as well as to raise it above the damp, and sufficiently high to work the young plant. Open the same with a duck bill plow-hoe, armed with wooden mould boards, long enough to make a drill 6 inches wide, and 2 deep, for the reception of the kernels, which should be dropped 3 feet apart, two grains in the hill, and covered 1 inch deep only, with a board, attached to a plow-hoe bevel; about 16 inches long, and scooped out below.

High land corn should be planted by the 25th of March in this latitude. Soon as it is well up, it should be sided with a Colter, 6 or 8 inches wide from wing to wing, and sharp in front, to prevent covering the young blades; and the earth thoroughly loosened around the corn with light and narrow hilling-hoes, and thinned out to one stalk at the same time. Soon as the grass appears on the beds, and immediately after every heavy rain, if possible, harrow the beds with Sinclair's "Five tooth expansive Cultivator;" which will gradually level them, by filling up the corn furrow. By the 1st of July the corn should have a thin flat hill.

Rich, and fresh lands, require another weeding between the stalks, and around stumps.

Corn should be planted, *worked, and laid by early.*

Light and sandy soils need not be subsoiled until planting season, as they are not subject to bake; and the benefits to be derived from the chemical action of the air and frost on such lands, will not remunerate for the extra plowing.

Wet, low or high lands, should be deeply subsoiled when the weather is dry in fall, and thrown up into high beds of 5, 10, or 20 feet width, with deep water-furrows between, running into a drain-ditch on the lowest side of the field. The manure should be applied on the beds, broadcast, just before reversing them for the reception of the seed corn.

All fertilizers, especially coarse ones, should be applied broadcast: so as to become thoroughly incorporated with the soil, in order to afford a uniform and constant supply to the thousand little corn roots that ramify the earth in every direction in search of food.

When manure is deposited in the hill, the corn grows rapidly, until the tap and brace roots cease to be absorbents: after which it perishes, or produces but a small nubbin; as the runners cannot find more nutriment than will sustain the extravagantly raised stalk, and consumption of a July's sun.

As the virtue of manures resides in their salts, and volatile qualities, it is obvious that they should be deeply deposited, and remain undisturbed: therefore the system of thoroughly plowing the land from

three to five times during the growth of the corn, is not only destructive to the land and manure, but equally injurious to the corn, by constant laceration of its tender roots, and exposing them to a vertical sun. We might as well expect, to fatten an animal by repeated venesection, or increase the volume of a river by cutting off its branches, as to calculate upon making a crop of corn, of a dry year, by thus tearing its roots with the plow. Hence the wilted, and dwarfish appearance of half the fields in our country, which will not yield more than was consumed in preparing the land.

The cultivator leaves the corn roots and manure, undisturbed in the beds; and as once going over the bed with it, is equivalent to four or five furrows of the common plow, we are thereby able to break the crust of the land often, which is all important in clayey, and adhesive soils; as the health of the plant, like that of an animal, depends much on its breathing freely.

This plan of cultivation will, almost to a *certainly*, produce an abundant crop of corn of an ordinary dry year, on *half* the land usually tilled; and leave the labor, and nett proceeds of *half* the hands, horses, lands, and food, to buy guano, or raise manure.

Corn should not be gathered until the cob shall have shrunk enough to permit the grains to unite firmly; as it is subject to be damaged by heat, and the weevil, if pulled before; but it may be cut and stacked after the first frost, with but little loss—early corn by the 1st of October.

Fodder cannot be stripped from the stalk with impunity to the corn, until the corn begins to harden; as the functions of the leaves of plants have been aptly compared to those of the lungs of a man—and as indisputable experiments have amply proven, that the loss in the corn amounted to a larger per cent than is saved by gathering the fodder too early; it is all important, therefore, to make the state of the corn, instead of the fodder, the test of the time for pulling it. "Dry silks, and rotting fodder, are no criterion, as they are often the premature result of drought, or too much rain." In damp and cloudy weather, fodder may be gathered, and attached to the stalk, by a single tie, with one of the withered blades, (without breaking it from the stalk,) which is then strong and pliable, without much, if any loss of time; as it can be collected, when cured, as fast as the hands can walk, without stooping, and tied up much earlier in the morning and afternoon, in consequence of its uniform order, and is not subject to be blown away and soiled with dirt and rain. It should be hoisted, and closely bulked down, as it loses much of its weight and flavor by exposure in stacks.

*The loss in the corn is reported to be one-sixth of the crop. See September No. of the "Arator."

In extenuation for the length of this Essay, we plead the importance of its subject to the welfare of our community; as failures to make supplies of corn, have done more to depopulate our State, than all other causes combined. But for your limited time, we should have enlarged upon each head; and as deep plowing has lately been mooted in this section *only*, likewise to have given the philosophy of its power for absorption and retention of moisture, and endurance in rainy seasons, as well as to have invited your consideration to the susceptibility of a field thus leveled by this plan of cultivation, for rest, fallow or improvement, and for the reception of peas, and the cereal grains, especially wheat, which may be put in with the "Joint Cultivator" without pulling the corn. And as experience is the most persuasive, and reliable argument, also to have reported, in detail, in confirmation of this plan, a crop thus cultivated, which will compare favorably with any; though it had no help from manure; suffered drought of three weeks duration in its roasting-ear state, and its full share from the ravages of the chinch bug.

Respectfully submitted,

S. C. WARD.

October, 1853.

For the Arator.

PORK RAISING.

I am disposed to think, that pork raising might be a profitable business in this part of the State, if the proper system were adopted. If the present prices of bacon, pork, and cotton, respectively, should be maintained, it would certainly be a better business than making cotton. At all events, we should raise our own pork; and it is a shame, that our farmers should buy Northern pork, and Western bacon; as some of them do every year.

The plan throughout the South, excepting only in those districts, where land is too valuable to admit of a large range, is to suffer hogs to run in the woods all the year, until time to take them up for fattening. It is with many literally, "root pig or die." Many do die, either of poverty, or disease, or the knife of the vagrant—to whom this system gives the means of living, without honest labor.

Those that survive, are generally stunted in growth, and no amount of feeding, will make fine perkers of them. But if farmers will not keep up their swine, they should at least, provide better means of support for them—by sowing small grain for them—having truck-patches, and planting mulberries, plum, and other fruit trees, in waste places about the plantation; and thus keep them in good order the whole year round, without feeding them much corn. A field should be sown in some kind of early peas, on which to turn them early—say about the middle of

August. Ground-peas are excellent for fattening hogs, and they can be made with very little trouble. They flourish best on very sandy land that is either naturally shelly or that has been marled and made rich by previous manuring.

But of all the crops raised in this State, there is none more valuable either to the pork raiser or other farmers, than that to which Carolina has given name—the SWEET POTATO.

Whether we consider the quantity of food from an acre of land—the amount of labor necessary to raise them—or their value as an article of food, whether for man or beast, as compared with other articles of food, there is nothing that can compare with the sweet potato. It might be to us what the Irish potato is to Ireland. Yet our farmers do not pay that attention to its culture that its value and importance merit.

After hogs have consumed the field peas, ground-peas, potatoes, &c., or have become fat, it is necessary, as every farmer knows, to feed them on corn a while, to harden the fat. They should be put in close pens with floors of fence rails or outside planks. And as the cold weather has set in by this time, the pens should, by all means, be sheltered, and kept well supplied with litter and plenty of pure water. From my own experience, I think sheltering hogs from bad weather, saves at least one-third in the food necessary to fatten them, and the manure is 100 per cent. better.

More anon from
Nov. 2d, 1855.

IKE.

For the Arator.

MR. EDITOR: In my last, I offered you some suggestions on the subject of Pork Raising, &c., which were not offered as anything original, but intended to have a general application to other subjects.

We should not only raise our own pork, but everything else that we can. Many of our farmers buy Western bacon to feed their negroes, Western mules and horses for their teams, and Northern hay to feed them. The very implements with which they cultivate their farms, are, for the most part, imported.—*They make cotton, THEY do.* They seem to be above practising the arts of husbandry. Indeed they are not husbandmen, or farmers, but *planters*; which they imagine, is a more dignified title. Even their cotton-gins are, for the most part, of foreign manufacture.

A division of labor is, I know, necessary, and advantageous to all classes. But let us encourage our own manufacturers, and mechanics: let us buy no carriages, household furniture, agricultural implements, or other articles of foreign manufacture, that can be made at home, or, at least, within the borders

of the State. Even if they cost us more, it would be good economy to buy them at home—thus keeping the money in the country, and saving the cost of transportation, which would come out of our pockets. At all events, never let it be said again, that our farmers, and especially the farmers of *Edgecomb, (the banner county of agricultural improvement,)* have to send North for mess-pork to feed their hands, and hay, to feed their mules.

Now, that the fertile regions of Western North Carolina, is being opened up to us, by means of Railroads, we hope to procure thence, many articles, hitherto obtained from the North—such as flour, lime, the coarser fabrics of domestic cloth, hay, (if we must needs buy hay) &c., which may be produced there more cheaply, than in this part of the State—paying for them with cotton for their factories, fish, &c.

The Railroads from the Atlantic seaboard to the Alleghany mountains, have already produced a great revolution in trade; for instance, the New York market, thus far in the present year, has been supplied with flour, almost entirely from Southern ports. How will it be, when the North Carolina road has been extended to the Tennessee line? Or when the Wilmington, Charlotte, & Rutherfordton road (a still more important work) has been completed; and the gorges of the mountains shall echo the snort of the steam-horse? How will it be, when the Deep River improvement has been finished, and the subterranean wealth of its valley, shall pour down the classic Cape Fear? Or when the placid bosom of Beaufort Harbor shall stir with a mighty fleet of ships, turning their bowsprits, as they leave port, to every point of the compass? Not until then, shall North Carolina be truly independent, or the North Carolina farmer, mechanic, manufacturer, or miner, feel his relative importance in the scale of being.

IKE.

November 3d, 1855.

GREAT YIELD OF WHEAT.—We learn from the Mountain Eagle, a very clever weekly paper published at Rutherfordton, that Mr. Benjamin Hamilton, of Golden Valley, Rutherford county, sowed last Fall $3\frac{1}{4}$ bushels of wheat on $3\frac{1}{4}$ acres of land, which yielded 145 bushels of cleansed grain—a fraction less than 45 bushels for one. Who of our North Carolina Farmers can beat this? Nearly 45 bushels of wheat to the acre; and besides his large wheat and corn crop, Mr. H. raises fine crops of Irish potatoes and choice apples. Let our farmers and planters exert themselves a little, in improving their lands, and they will soon find themselves amply rewarded for their extra care and labor. Indeed, it will soon relieve them of a great deal of extra toil and vexation attendant upon their old system of farming.

PRIZE ESSAY.

THE following Essay, by Dr. E. L. PERKINS, of Sampson County, received a premium at the Fair of the North Carolina State Agricultural Society, Oct., 1855. It will be read with much interest and profit by our agricultural readers.

AN ESSAY

ON THE ACCUMULATION, PREPARATION, AND APPLICATION OF STOCK YARD AND STABLE MANURE.

On the success of agriculture depends the permanent wealth of every nation. It is this alone that brings undiminished wealth into the lap of Empires, and sustains the arts, the arms, and the commerce of every people. The nation that does not cherish agriculture as one of the first objects of its care, may be likened unto the foolish man that built his house upon the sand; when the time of peril arrives, insecurity and overthrow are its attendants. The arts and sciences have their value, and contribute largely to the comforts of the human family; but agriculture is the indispensable rock, forming the foundation on which all the rest of the superstructure must stand. To agriculture we are indebted for everything we eat, and for the materials out of which most of our wearing apparel is constructed. Take away our food and we die; take away our clothing and death is preferable to life. To agriculture, then, we look for the chief comforts of life.

If to till the land, be the most important calling in which a nation's subjects can engage, it follows of necessity that the tillage should be brought to its highest possible state, so as to yield that abundance which man's necessity requires. The object most desired is, *to obtain from the soil the greatest amount of produce with the least possible labor, and yet not take from the soil more than we have restored.* Every farmer wishes an abundant crop: he wishes to obtain it without overtasking his workmen: he wishes his land to be uninjured; and, if possible, better than before. These are not unreasonable wishes. Nothing is here desired but what can be obtained by proper management. To obtain the desirable end, there is one rule to be kept constantly in view:—*Save every ounce of material, within reach, that can be converted into manure.* This rule should be constantly enforced, and every farmer should watch with eagle-eyed activity, his chances of adding to the bulk of his manure pile. But before our farmers will be brought to practice these rules, one great error will have to be laid aside, namely, that of cultivating too great an area of land. The ruler of a farm is too apt to imitate the ruler of a nation.—Each thinks it is his glory to widen the borders of

his dominion. Hence we so often see every energy put forth, not to enrich that which has been brought under cultivation; but to extend the field, and encircle another and yet another territory. There is a wise saying equally applicable to farms and Nations.

“Extended empire like expanded gold,
Exchanges solid strength for feeble splendor.”

First of all, the farmer must see himself corrected in this error. Instead of putting forth all his energies to felling timber, and burning logs, he must prepare the stables, his barn-yard, his cattle-stalls, and every place upon his premises, where it is possible, for the accumulation of manure. The same labor that was previously bestowed upon clearing land and enlarging fences, may now be turned to the gathering of such material as will render the earth more fruitful.

ACCUMULATION OF MANURE.

Before sending your hand out to collect materials to be converted into manure, let us look after the chances of getting those materials, and at the same time enquire into the profitableness of the employment. There is all your wood land covered with leaves. Thousands of loads can be gathered and put in your lot and stables, under your cattle, horses and hogs, when you pen them. There is in all those woods, and especially under the sides of the hills, around your swamps, an inexhaustible treasure of vegetable mould, an excellent article to mix with the leaves in the lot and stables. There is in the branches and swamps around your field, exhaustless beds of mud already rich, but which will form an excellent adjunct for your stable and barn-yard manure. Now your hand is provided with a spade, shovel, fork and hoe, and goes to the sides of the swamp, say one-half mile from the barn-yard. There he rakes up the leaves on the sides of the hills, scrapes up the vegetable mould, and digs out mud from the swamp and mixes all together in piles ready for hauling. In this way, one hand will gather 75 loads per week, and with a horse and cart, in one week more, will haul it all into the barn-yard. This 75 loads, after having been trampled in the lot, and mixed with the droppings of the stock, with the addition of waste forage, will make 100 loads of manure ready for the field. This manure is worth at the pile from 25 to 50 cts per load. Sometimes it is the case that these materials are not so accessible as here represented, and sometimes they are more easily obtained. The vigilant farmer will seldom be at a loss for material. There are the cleanings from the ditches, the weeds that grow in the fence corners, and many such things, that may be incorporated in the manure pile. Corn-stalks, rice straw,

wheat straw, oat straw, rice straw, and grass, green or dry, are all appropriate material for the barn-yard. Having collected your various materials, you have now a more particular duty to perform; one on which your ultimate success or failure very much depends:

THE PREPARATION OF MANURE.

Many fatal errors have been committed in this department of husbandry—fatal to the stock that have been used for the preparation of the material, and fatal to the manure itself. To allow manure to accumulate under the feet of your cattle and horses until your lots and yards become a quagmire of filth, often several feet deep, is to invite disease among your stock. To allow your manure to stand exposed to the drenching rains, is to have the greater part of its most valuable salts washed out and carried away. To allow your manure to stand exposed to the scorching rays of the sun, is to cause its volatile gasses to evaporate, and leave you an almost worthless pile of trash. Upon an analysis of the various manures upon a farm lot, the following was found to be the result on the average:

Of Carbon,	35.8
" Hydrogen,	4.2
" Oxygen,	25.8
" Azote,	2.0
" Salts and earth,	32.2
	<hr/>
	100.0

This analysis was made when the manure was dry. It will readily strike the mind of the intelligent farmer that a material composed of the above named substances needs protection from the sun and rain. This applies, however, to such as has been well trodden, and is now sufficiently fine to be applied to the soil. The unrotted straw and leaves are not capable of much injury from sun and rain; but as soon as decomposition begins, so soon they begin to be capable of injury from such sources. Hence, if all manures raised in open lots are not thrown up and protected by some means, they soon begin to decrease in their value. Intelligent farmers therefore have constructed shelters in the midst of their open lots, with the following ends in view: To protect their manure from the sun and rain, and yet to allow a sufficient amount of moisture to encourage decomposition. To this end the shelter should be covered with boards in a single layer, not being very careful to fit the joints too closely. This will give sufficient shade to screen the pile from the hot sun; it will turn off the showers of rain and yet admit a sufficient amount of dampness to encourage the decomposition of those particles of matter that were not decomposed at the time of throwing up the pile.

With such a shelter in an open lot, it will be but little trouble to keep all things in good condition. As fast as the litter on the surface of the lot is trodden to pieces, it may be thrown with the droppings under the shelter, and the surface of the lot relittered; thus the cattle or other stock are made comfortable, and the manure pile goes on increasing in bulk and value. But when all these directions have been followed, the farmer has yet another evil to contend with. When the manure is thrown into piles, it will often become heated by fermentation; when this heat becomes too high, the ammonia being very volatile, escapes, and thus is lost one of the most highly stimulating properties of the pile. This exigency may be met, by sprinkling over every layer of manure a small quantity of charcoal or gypsum, which absorbs and retains the ammoniacal gasses. Mr. Gardner, says: "In Switzerland it is common to apply a small quantity of the solution of green vitriol or copperas (sulphate of iron) to the yard manure. One pound of copperas, in solution, will answer for about three hundred weight of the manure. This converts the carbonate into the sulphate of ammonia, and removes any bad odor. It also improves the quality of the manure very considerably." With a good supply of charcoal, gypsum (Plaster of Paris) and copperas, the farmer may prepare a bulk of manure, more than double the value of that which is left in the lot unprotected, according to the usual custom of this country. A few intelligent farmers have tried this improved mode of protecting their manure piles, and found a rich reward for their labor.

Stable manure, in this country, has often but little more preparation than to accumulate under the horses feet, until it is needed for use in the garden or field. This is objectionable for two reasons: It is disagreeable and unwholesome for the horse, giving rise to the scratches and other diseases. The manure pile may also be increased in size very much by constantly cleaning out and relittering the stable. Every stable, or string of stables, should have a manure shed hard by, and the stables should be purged as often as possible, and its contents thrown under the shed. If the farmer cannot conveniently possess a quantity of charcoal, plaster or copperas, he should endeavor to have a good supply of well rotted vegetable mould, mixed with rich earth, from the hedge rows, fence corners or elsewhere; and this should be well sprinkled among the manure in the piling. It will answer two purposes—to prevent too high a state of fermentation, and will absorb much of the volatile gasses. As hogs are fattened in winter and the manure used in the spring, it is not so highly essential that all the precautions be used in protecting the manure of the hog-pen. Nevertheless:

if the seasons are rainy, it will not be much trouble to throw a few boards over the pens or piles of manure. An excellent plan is to elevate the pens two or three feet from the ground, and fill the space below with vegetable mould, mud and such like materials. The pen should be floored with flat rails well covered with straw. In this way the slops and droppings from the hogs, are washed down and penetrate the material below; so that in three or four weeks, the material under the pen may be dragged out, and a new supply thrown under, or the hogs removed to a new pen. With this care, each hog in the course of fattening, may be made to produce manure enough to raise as much corn as will fatten another hog. Each horse and cow may produce two cords of manure, or if the cow is stalled only at night, but half that quantity may be expected from the cow.

Should the farmer exercise his skill in the preparation of his yard and stable manure, he will be richly rewarded for all the labor thus bestowed. It is, however, sometimes not convenient to adopt the plans here recommended. But the ingenious man will always contrive to some advantage; if he cannot protect his manure from the rain, he will have trenches or sinks on the lower side of the lot, to receive the liquids that would otherwise pass away. Some have vats, and some, as is the case in Belgium, have hogsheds under the sides of their stables and stalls, with gutters to direct all the liquids into those hogsheds. These liquids are poured over the bulk of manure before being hauled into the field. To prevent these liquids from becoming offensive, copperas is thrown in at intervals, and thereby the liquid is also improved.

In the preparation of compost heaps about the yard, no better plan can be adopted than to box up a square place, say near the back door of the kitchen. Into this may be cast, by way of a beginning, several loads of mould. It may now stand as the receptacle of the ashes and sweepings from the house and yard, the suds from the wash tub, night soil, and everything that can be gathered about the house and yard, that is capable of being converted into manure. It is of the highest importance that such a pile should be sheltered, and a little copperas occasionally sprinkled over the pile. These piles thus cared for, are often very little inferior to guano.

It is not prudent to mix lime directly with azotized manures, as it drives off the ammonia and thus depreciates the value of the manure. If, however, you have an amount of coarse, half-trodden litter, that it is necessary to throw up in piles, lime will be of benefit, by assisting its decomposition. Lime does well in compost heaps made of litter from the woods or swamps, but is not valuable when applied

directly to barn-yard and stable manures. The better rotted the manure, the greater injury the lime will do. There is a difference in the value of well rotted manures—that made from one animal differing from another. The greatest difference is seen, in comparing the *salts and earths*, as found to exist by chemical analysis. It will stand thus when examined in a dry state:

From the Horse,	17.3
" " Cow,	17.4
" " Pig,	20.6

The difference in this material is in favor of the pig. The same difference does not exist on comparing the relative proportion of carbon, hydrogen, oxygen, and azote. The likeness is so near, that the same general principles of preparation will apply to all. An excess of water will dissolve the salts in either, and carry it away—an excess of heat, whether from the sun or from fermentation, will drive off the ammoniacal gasses. Having accumulated and prepared his manure, the farmer's mind needs now to be skillfully exercised in the

APPLICATION OF MANURE.

As stock yard and stable manures are generally made up of all sorts of materials, they generally contain all the substances necessary to the improvement of the soil. But as these manures differ materially in their fineness or coarseness, according to the extent of the decomposition which the parts have undergone, it will require some judgment in their application. Different parts of the plantation may be of different soil, and different crops have to be applied. All these differences have to be considered, and the manure applied accordingly. Where the soil is sandy, less manure will be borne at a time, but it will require to be more frequently repeated. That sandy soils will not retain manure, is a fact well established. By adding clay, however, to such soils, much advantage has been gained; the soil thereby becomes more adhesive and absorbs and retains the fertilizing gasses that are in it. Clay soils will receive a greater amount of manure at one time, and retain it much longer than sand. These things being known, farmers are particular to select those parts of the farm for high improvement, that will best retain the substances applied.

It is not always convenient to have all the piles of manure in the same state of preparation. Some of the piles will be well rotted, others to the contrary. Farmers often apply the terms, short and long or cold and warm, to such conditions. The

long or half rotted manures are very well adapted to certain crops, as potatoes or any other part of a crop requiring loose and open soil. Such manure is also well adapted to cold wet places on the farm. As it has yet to undergo some fermentation, and as fermentation is attended by heat, it becomes quite appropriate to cold soils. Those manures which are thoroughly decomposed, undergo no more fermentation after being introduced into the soil; hence they produce no heat. The gasses are all free and are instantly absorbed in the soil; hence the grain should be immediately planted, that is intended for the part of the farm where such manure is applied.

All manure from the barn-yard and stables should be covered in the soil as quick as possible, after being carried in the field. A few hours of hot sunshine will often materially damage a load of manure. Farmers would do well, where it is possible, to select cloudy days for hauling and distributing manure. Where farmers are in the habit of annually applying manure to their land, it is of the highest importance that they plow deep. And every year, from the time they begin the process of manuring, they should sink the plow yet deeper, until they have made their soil as deep as a plow can make it. This method will greatly assist the soil in retaining the strength of the fertilizers. The salts and gasses will penetrate all the loose portions of the soil, and thus be retained, when, otherwise, if they lay too near the surface, they would be dissolved by the rains, and evaporated by the sun.

Where pure animal dung is applied to the soil, without being mixed with other materials, and this application is frequently repeated to the same piece of land, the result is often unsatisfactory.—After such repetitions, we will suppose the farmer sows said piece of land in wheat. The wheat grows rapidly, looks well, and the farmer is highly pleased with the prospect. But as the wheat begins to head, it all falls down, the stalk not being of sufficient strength to sustain the weight of the head. Something is lacking. The unscientific man says his land is "manure sick"—ruined because it is "too rich." The man of science says, not so: land cannot be made too rich. It is the result of misapplication. Something else is needed. Now, in this case, the manure was chiefly of a stimulating character, and contained but little of those substances constituting the essential food for a wheat stalk. The *silicate of potash* was the substance needed. It is this that forms that shining crust on the outside of a stalk of corn or

wheat, which gives solidity and strength to the stalk. A little ashes or mould from the woods, scattered over the soil would have met the demands in this case. A fine crop of strong wheat would have been the result. Hence the importance of an enlightened system of agriculture.—Hence, also, the importance of the farmer gathering into his barn yard as great a variety of materials as possible, so that, in distributing his manure, he may carry into the soil that variety of elements necessary to the production of the crops desired. Some vegetables, however, are highly nitrogeinized, and require very stimulating manure. Such are cabbages, turnips, &c. The farmer will find it necessary to prepare separate piles of manure for the production of such articles. A little experience, with close observation, will soon enable the tiller of the soil to guide his course aright in this matter.

The durability of manures depends much upon their state when applied to the soil, the manner of their application, and the crops they have to support. The texture of the soil and the influence of climate also makes a difference. Adhesive soils are always the best except for a few kinds of vegetables. The climate we have no power to select, without choosing another location; but the action of the climate we can control to a very great extent. Under the scorching influence of our southern sunshine, we may improve the texture of our soil by the admixture of clay and sand, and by placing the manure well into the earth save much that would otherwise be lost. But one of the most important considerations connected with this part of our subject, is, that we do not rot our manures too much, unless the nature of the crop renders it essential. Thoroughly rotted manures spend their energies more immediately than those not so completely decomposed. Bonssingault says, "Since it is by undergoing modification in the course of their decomposition by putrefaction that those azotized substances which are favorable to vegetation are developed in quaternary compounds, it will be readily understood that, all things else being equal, a manure which is completely resolved into soluble or gaseous products in the course of a single season, will exert, in virtue of this alone, the whole of its useful influence upon the first crop. It is entirely different if the manure decomposes more slowly; its action upon the first crop will be less obvious, but its influence will continue longer. There are manures which act, it may be said, at the moment they are put into the ground; there are others, the action of

which continues during several years. Nevertheless, two manures, although acting within periods so different in point of extent, will produce the same final result if they severally contain the same dose of azotic elements, if they are of the same intrinsic value."

Proceeding upon this theory, the farmer will exercise his own judgment, taking into consideration the soil, the climate, and the crops he wishes to produce, as to whether he will encourage the complete decomposition of his manures, or apply them with less preparation. Their decomposition may be encouraged by pouring liquid manure over the pile until it is saturated, or it may be retarded by mixing with it layers of untrodden mould. In all these things, experience will soon enable a man to operate satisfactorily.

But to observe and apply the various rules for correct and scientific agriculture, requires perpetual vigilance. The farmer's manure pile is his capital bank stock, which he invests annually; and reaps back the principal with a liberal percentage as interest. And by reinvesting annually, he obtains a compound interest, that, if well managed, pays better than any banking system in the world. This is the true farmer's bank, and they should all invest in it. It never breaks; always pays liberal dividends, and consequently offers the best chances for safe and profitable investments.

Clinton, September 5, 1855.

From the Standard.

MESSRS. EDITORS:—The following letter was not received in time to append to the proceedings of the late Fair in the Arator. You will probably oblige many of your agricultural readers by giving it an insertion in your widely circulating journal. It shall appear in my next number, and I hope the papers generally will copy it, that the liberal offer of Mr. Dibble may be known throughout the State. Very respectfully,

THOS. J. LEMAY,

Sec'y N. C. St. Ag. Society.

RALEIGH, Oct., 19, 1855.

DEAR SIR:—With a view of contributing to the objects of the North Carolina Agricultural Society, and of aiding in the improvement of agriculture generally in the State, I will purchase guano or other manure, agricultural implements and tools, improved stock or seeds, free of commission.

Orders addressed to Dibble & Bunce, 180, Front Street, New York, will be cheerfully attended to.

Yours truly,

C. B. DIBBLE.

"THE EXCELSIOR."—We had an opportunity, the other day, of witnessing the operation of a Mill called "the Excelsior," invented by Mr. Charles Leavitt, of Quincy, Illinois, who obtained a patent on the 27th February, 1855. It is really astonishing to see with what ease and rapidity it chews up the corn and cob together. The great advantage which this Mill has over all others is this: fine grinding teeth are cast on large moveable rings, of which there are two sets—one for grinding corn and cob, and the other for grinding fine meal; and they can be furnished for \$2 00 per set, at any time. For simplicity of construction, and convenience of use, we believe the "Excelsior" has no equal. It is warranted against breakages, and will grind from 10 to 15 bushels per hour, and can be worked with one or two horses. This mill received the first premium, (a Silver Cup,) in a thorough contest with the "Little Giant," at the late State Fair at Columbus, thus showing its superiority over all others. The "Excelsior" is manufactured by R. McLagan & Co., 157 Main Street, Richmond, Va.—*Ral. Reg.*

NEW MODE OF BUILDING.—Ionia, Illinois, Sep. 20th, 1855. Thomas Brown—While in your office last winter, Dr. Kirtland remarked that, "in five years there would not be a brick made in Cleveland;" meaning of course, manufactured in the usual manner. It may be so: here in the West people are building cellar walls with gravel and water-lime or cement, using neither stone nor brick. They do not dig the cellar as large as the house is to be, within about eighteen or twenty inches; then they put up what is called the mould, the thickness they want the wall, which is usually about one foot; then cement the cellar, leaving the eighteen or twenty inches inside, which makes a good shelf all around it. If it is well cemented, it will not need to be drained as the cement keeps the water out as well as it keeps it in a good eastern. This makes a better cellar and is much cheaper than with stone, where stone must be hauled any considerable distance. Twenty bushels of cement and fifteen or twenty loads of gravel are sufficient to build a foundation and cement a cellar 20 by 30 feet. One advantage in this kind of a foundation cellar is, that any person of ordinary skill can build it, thereby saving one of the heaviest items of expense in building: another is, that rats and mice will find no hiding places in such a wall.

There is a house of an octagonal form, forty feet in diameter now being built in this vicinity, of gravel and cement.

W. J. WILSON.—*Ohio Farmer.*

B E E S .

EVERY farmer should keep bees; a few swarms to furnish honey for his own use, if no more. They toil with unremitting industry, asking but a full sweep of the wing, and no monopoly. Every man, in either town or country, can keep bees to advantage. Dr. Smith of Boston, has an apiary on his house top, from whence his little winged laborers traverse the air eight or ten miles in search of food. What a delicious banquet they afford, from the rich nectar gathered! They collect honey and bread from most kinds of forest trees, as well as garden flowers; orchards, forests, and trees—all contribute to their wants, and their owner is gratified with a taste of the whole. Sweetmignonette is especially mentioned as easily cultivated by drills in a garden, and is one of the sweetest and richest flowers in the world, from which the honey bee can extract its food.

The cobwebs must be kept away from the immediate vicinity of the hive, and all other annoyances removed.

"Never kill a bee." The smoke of the *fungus maximus*, or common puff ball, when dried so as to hold fire, has a stupefying effect on the bees, and renders them as harmless as brimstone does, without any of its deadly effects. By means of this, weak swarms, which would not live through the winter, may be united to strong stocks. It is a fact, borne out by experiment, that a hive thus doubled will not consume more honey in the winter than a stock in its natural state. This was discovered by a Swiss pastor; De Gelior. The additional heat seems to serve instead of additional food, to keep up the vitality of the half-torpid bees. A cold, dry, dark room, is the best winter quarters for bees. They will consume less honey than if left on their summer stands, and will not be weakened by the loss of thousands, which, tempted out by the premature warmth, are caught by the cold winds, fall to the ground and never rise again.

Dryness is essential; and ventilation, or proper airing of the hives in summer, is the most valuable improvement in bee keeping.

Barley is becoming more an article of diet. It makes the finest of cakes when prepared like buckwheat. Farmers are finding it as poor economy to turn barley into beer to make paupers and criminals for them to support, as to convert apples into cider to create an appetite in their children for stronger drink. Ground, it is a most valuable food for all kinds of stock.

POULTRY.

NEARLY every family can, with very little trouble have eggs in plenty during the whole year; and of all the animals domesticated for the use of man, the common dunghill fowl is capable of yielding the greatest possible profit to the owner.

The Hen-House should be warm in winter, well ventilated in summer, whitewashed and kept clean. Roosts of sassafras poles are less infested with lice. Have no ground floor. Supply slacked lime, fine gravel, or ashes, or burnt oyster shells, &c.

Feeding.—They will sing over Indian corn with more animation than any other grain. The hen must have secrecy and mystery about her nest;—watch her, and she will forsake her nest, and stop laying.

They eat less, if allowed to help themselves to what they want, than if fed in the usual way; for, in the latter case each tries to get as much as it can, and thus burdens itself, but finding in the former ease that they have abundance, they eat but little and that generally in the morning early, and in the evening going to roost.

A farmer may keep an hundred fowls in his barn, may suffer them to trample upon and destroy his mows of wheat and other grain, and still have fewer eggs than the cottager who keeps a single dozen, who provides secret nests, chalk eggs, pounded brick, plenty of Indian corn, a few oats, lime, water and gravel, for them; and who takes care that his hens are not disturbed about their nests. Three chalk eggs in a nest are better than a single nest egg, and large eggs please them.

A single dozen, fowls, properly attended, will furnish a family with more than 2,000 eggs in a year, and 100 full-grown chickens for fall and winter stores. The expense of feeding the dozen fowls will not amount to 18 bushels of Indian corn. They may be kept in cities as well as in the country, and will do as well shut up the year round as to run at large with proper care.

A Fact.—Eggs the nearest to roundness produce females, and those pointed at one end always produce males.

For Fattening.—Boiled Indian, wheat and barley, is better than oats, rye or buckwheat. One-third is gained by boiling.

Orchards of pear or apple trees are more subject to blight and destruction, if open and sloping to the West, than in any other exposure. Either ashes, iron or soap suds, applied to the roots, have cured blight in pear trees.

THE SUGAR BEET.

BY JAMES RONALDSON, PHILADELPHIA.

In the feeding cattle, milk cows, and stock of all kinds, every farmer who has tried the Sugar Beet, knows that it is equal to any, and superior to most of the feeds that are used. Its culture is attended with little expense, and in our dry climate is more certain of making a good crop than any other of the roots grown for the purpose of feeding stock.

A gentleman interested in the growing of sugar cane in Louisiana, states that a crop of Sugar Beets is found to be superior to all other crops as a refresher and renovator of the land after the fourth crop, that is, the fourth year of sugar-cane. If it proves suitable for making sugar from in the cane latitude, the making of sugar will assume an entirely new character; and in Louisiana, the boiling season will commence with the beet, and close with the cane, whereby the same capital that is invested in the work, machinery, &c., connected with the boiling house, will prove a great saving on this portion of the planter's capital.

As yet the process of extracting sugar from beets has not been made sufficiently perfect to obtain the whole saccharine matter as in the case of the sugar-cane, therefore the residue forms excellent food for cattle.

Choice of Ground.—Beets thrive in the soil suited to the potatoe. In the absence of manure the roots will be small, but where they grow fresh and healthy, it has been found that small plants yield a large proportion of sugar; but this by no means makes up for the want of mass.

Land essentially stiff clay is not suitable for beets, because the seed germinates badly, and the root becomes forked and rises too much above the surface, where it becomes hard and reedy. One of the evils attending forked roots is, that stones, gravel, and earth get enveloped in the interstices and injure the machine, when the object is to make sugar. Clay soils are improved by deep and frequent ploughing and harrowing; the manures best suited to this kind of ground, are half-rotted straw, fresh stable dung, leaves, &c.

Preparation of the Ground.—Here, as in all other departments of the farming business, much of the success depends on the skill and judgment of the farmer. In many cases three ploughings will be necessary, and one of these ploughings should be before winter, that the turned-up soil may be mellowed by the frost; the last ploughing has to be in the spring immediately before plant-

ing the seed; two ploughings in this country will be found sufficient; in all cases it should be well harrowed, and rolling will be an improvement that amply repays the expense. Deep ploughing is generally useful, but the farmer has to consider the nature of the substrata. It would be improper to turn up much of the poor clay or gravel bottom, and where the substrata is an open sand, deep ploughing is not required. Manure in which the process of fermentation has not advanced far, will answer best for beets, nevertheless all kinds are useful; but the half-rotten best divides the soil and suffers the roots freely to expand.

Of Sowing in Beds.—By this method the whole of the seed is sown on a small portion of land compared with what it is intended to occupy; these plants will be fit to pull up and plant out where they are finally to remain, in a month or six weeks from the time of sowing; this planting is performed by means of a dibble with which holes are made in the ground, always a little deeper than the length of the plant that is to be put into them, and with this dibble the earth must be carefully pressed close to the root. This mode of sowing should be thought of only where seed is scarce, the quantity to be sown not great, and labor easily procured.

Broad Cast.—This manner is the simplest. Six pounds of seed will be required where two and a half or three would have been enough when planted in drills by the hand, and the produce is never as great as by the following method:

Rows or Drills.—The little furrows into which the seeds are to be dropped are made by a harrow, having the teeth at the distance one from another that the rows of beets are intended to be from each other, and the seed is dropped two or three into the drills at the distance of twelve to eighteen inches apart from each other. After the planting is finished, the seeds are covered by having a light harrow with plenty of teeth in it drawn over the ground. In this way there is a great saving of seed, and the plants are regularly spaced. Four boys will plant an acre in a day. By using a drill drawn by a horse, the labor is very much abridged, and the work will be expedited. This machine is very important to those who plant large fields. In fixing the distance that is to be between the rows, reference should be had to the kind of horse-hoe that is to be used in keeping the crops free from weeds. When the plants are far from each other the roots will grow to a large size, and the contrary will result from planting them close. The seed should be planted at the depth of from one to two inches.

Time of Sowing.—This depends on the position of the place and the nature of the soil; as a general rule, the earlier the better. Provided the land is dry and in proper order, early sowing is particularly important when the object is to make sugar, because the roots arrive sooner at maturity and allow the process of crushing to commence early.

Of Hoeing.—Few plants suffer more than the beet from neglect, and the baneful influence of weeds in the first stages of its vegetation. The ground therefore has to be kept free of weeds, and it should be kept mellow during the plant's development. Beets require one or two hand-thinnings, and as many hand-hoings. The first of the hoings should be about when four or five of the leaves have put out, the second in from three to five weeks afterwards. All the plants save one must be pulled up at the time of hoeing; if not properly thinned, there will be a cluster of leaves, but very small roots; where there are blanks, they should be filled up with those pulled up from where there are too many. After the rows have been carefully freed from weeds and properly thinned, the horse-hoe, cultivator, or drill harrow can be advantageously run between the rows. After each horse-hoeing, remove the earth thrown on by the harrow, &c. If any of the beets shoot out into the seed stalk, cut off these stalks, because this growth would be at the expense of the root.

Harvesting.—The evidences of the plant being ripe are a falling down of the leaves, and those of a bright green, turning yellow and brown. The influence of drought may bring on these appearances; the observing farmer will understand when this change is caused by heat, or want of moisture; indeed he has to attend to the weather, and the appearance of the approach of winter, that he may take advantage of all the growing season, and at the same time not be too late in harvesting, and thereby expose the crop to be injured by frost. The roots should be pulled by hand or assisted by the spade when necessary. Shake the earth off them, and be careful not to strike one against another or in any way bruise them; bruising disposes them to rot. Cut off the tops, being careful not to cut the beet. The leaves being cut off lessens the disposition of the root to vegetate, and it prepares them to be housed. The beets should lay on the ground until they are dry, before they are housed.

Preservation.—The roots must not be left long on the ground exposed to the air, heat and moisture; much heat or cold are both found detrimental, as a heat of fifty-six to sixty degrees Fahrenheit, in damp weather, will produce a fermentation sufficient to reduce the quantity of saccharine matter; and on

the other hand, beets freeze very readily, so that only a few degrees below thirty-two will dispose them to rot.

The best aired cellar is not better for securing the beet than a judiciously made pit. It is most prudent to make them large, because if a part of the contents of a pit begins to spoil, the disease will spread through the whole mass. They may be made from four to five feet wide, and eight, ten, or twelve long. One or two feet is deep enough; this hole is to be filled with beets, and piled up until they form a ridge, and the whole is to be covered with the earth dug from the pit; a drain should be cut round the heap, to carry off all water, it being of importance that the beet be kept dry, and for this reason, ground naturally dry should be selected for the pits: perhaps in our severe climate it may be necessary to spread a little straw or corn-stalks on the outside of the heaps, to keep out the frost; if put inside, it might rot and spoil the beets; and it may be useful to open the pits from time to time to air and keep them fresh, and if any are observed to spoil, they should be carefully taken out. The preserving of beets is the most difficult of all the branches connected with them.

Growing of the Seed.—It is only in the second year that it produces seed. The proper time for choosing the roots from which the seed is to be produced next year is when taking up the crop; these should be healthy, somewhat above the medium size in length and thickness; well formed and no ways forked, and of a fine light color (if for sugar, perfectly white;) they should be kept through winter in sand or dry earth, and placed in a temperate barn or cellar equally guarded from the influence of heat and cold.—They should be planted out in March, or so soon as the land is in good order, and at the distance of two or three feet apart: the branches being liable to split off, and break down, have to be supported by sticks or frames. When the seed is ripe, which will generally be in September, the stalks are to be cut off and tied into bundles to dry, and then the seed is beaten off or removed from the stems by hand. The small seeds towards the outer end of the branches do not ripen well. The next process is to expose the seed to the sun, and then it is put into sacks and kept in a dry place, where mice and vermin shall not have access to it. The average yield of plants in France is from four to six ounces of good seed.

General Remarks.—The Beet is found, under some circumstances, to degenerate, the seed of the white plant producing yellow and red roots: this tendency may be checked by changing the seed from clay to sandy, and from sandy to clay soils. The seeds, if carefully preserved from moisture, insects, and vermin, will keep for several years; but after four

years, it will not be prudent to sow it. When the object is to make sugar, care should be taken to have seed that will produce white roots; and early sowing will afford the opportunity of commencing the crushing and boiling at an early period. The early bruizings produce the largest proportion of sugar.

When the Beet is employed in feeding cattle, one of the effects will be, to produce more and richer manure, and this will place in the farmer's power the entire command of his farm; he can do with it whatever he pleases. Every encouragement is held out for the culture of the beet. It being a green crop, draws much of its nourishment from the atmosphere, and in place of exhausting the land, leaves it in fine order, for any crop the farmer may choose to put on it. Beets in no way interfere with the cultivation of wheat, clover, barley, Indian corn, potatoes, turnips, &c. With the aid of a few beets, the profitable effects of that most useful grain, Indian corn, will be greatly increased in feeding cattle. Calves fed with beets or roots in their first winter, will generally be as good animals at the end of two years, as those that have been fed the first winter on dry food and corn, will be at the end of three years.

A NATIVE COW.—Talk about your Parkams, Ayershires, &c.; being so far superior to native Stock, we have for a long time thought it a humbug, and that our own native stock, with the same treatment, would not fall so far below these foreign breeds as some people pretend to believe: and now we are convinced of it. A cow of an old Franklin stock, belonging to Dr. King of this place, gave, a day or two ago, FOUR GALLONS of milk in a day! We believe that most of our ordinary milch cows, with such treatment as they deserve, would well repay their owners for their expense—whereas a cow half fed, is hardly worth having at any price. How many families are there with from six to ten milch (?) cows, who often have to buy butter for the table, when two or three cows, consuming the food allowed the ten, would furnish an abundance of milk and butter.

Louisburg Eagle.

THE Wadesboro' News says, that on the 3rd instant, five of Major Richardson's hands picked 1285 pounds of cotton. One of the five got 300 pounds. The other four ranged between 235 and 255. Ten other hands picked 1861 pounds, making an aggregate of 3086 pounds gathered by 15 hands.

Wash your Butter in cold water, work out all the buttermilk, pack it in a stone jar, stop the mouth *air tight* and it will keep sweet for ever.

SUCCESSFUL FARMING.

THE Farmers' Cabinet relates an instance of a farmer in the neighborhood of Amherst, N. H., who commenced in the world as a day laborer, and who, notwithstanding he has at various times sustained heavy pecuniary losses in the investment of his funds, is now worth at least *one hundred thousand dollars*.

"This man, when thirty years of age, by the avails of his industry added to a small legacy, was enabled to purchase and pay, in part, for a farm of one hundred and thirty acres of land, one hundred of which was under cultivation, but in a very low state. The farm is altogether upland, with a soil composed of loam, clay, and sand, in the chief of which the latter preponderates, the former being least considerable. When he commenced farming, he adopted a particular system of rotation, to which he has implicitly adhered from that time to the present, which is forty years, and his success is the best comment on the worth of the experiment. His mode was as follows: having divided his farm into eight fields of equal size, as near as possible, three of those fields were sowed with wheat each year, one with rye, one planted with corn, two in clover, and one an open fallow, on which corn had been raised the year previous.—One of the two clover fields is kept for mowing, the other for pasture, both of which are ploughed as soon after the harvest as possible, and prepared for wheat in the fall. All the manure which is made on the farm for one year is hauled in the spring on the field intended for open fallow, which is then ploughed, and, after one or two cross ploughings through the summer, is also sowed with wheat in the fall. The field on which the rye is sown is that from which a crop of wheat has been taken the same year, and which had yielded three crops. Corn is planted on the field from which rye had been taken the year previous, the stubbles of which are ploughed down in the fall. Clover seed is sown early in the spring on two of the wheat fields, those which have been most recently manured. By this method, each field yields three crops of wheat, two of clover, one of rye, and one of corn, every eight years. Each field, in the mean time, has lain an open fallow, and received a heavy dressing of manure, perhaps at an average of fifteen four-horse loads per acre. His crop of wheat is seldom less than fifteen hundred bushels, but often much more. His average rye crop is about four hundred and fifty bushels, and his corn crop annually about five hundred bushels;—all which grain at the present prices, would amount to more than *two thousand dollars* annually, and at former prices to double that amount, and his farm is withal very highly improved."

MISCELLANEOUS HINTS.

Wild Onion may be destroyed by cultivating corn, ploughing and leaving the field in its ploughed state all the winter.

Remember.—The great rule in relation to animals holds perfect in its application to vegetables: breed only from the best animals; *defects and imperfections have always a tendency to propagate themselves, and are always, in a greater or less degree, transmitted.*

Wheat shoots strongest when there is an interval between the time of ploughing and sowing, but *barley* is most vegetative when sown immediately after the plough.

Grease Wheels.—50 parts, by weight, of pulverized black lead 50 of lard, 50 of soap, and 5 of quick-silver. Rub the lard and mercury first together, then the lead and soap. If well mixed it is invaluable.

Plants, when drooping, are revived by a few grains of camphor.

Flowers beginning to fade, can be restored by putting the stems in scalding water.

Bacon Hams in summer.—Pack in a barrel, in clean dry ashes, or charcoal; head up the barrel and put it where it is dry, and as cool as possible.

Timber cut in the spring and exposed to the weather *with the bark on*, decays much sooner than that cut *in the fall*.

In feeding with corn, 60 lbs. ground goes as far as 100 lbs. in the kernel.

Apples.—Experiments show apples to be equal to potatoes to improve hogs, and decidedly profitable for fattening cattle.

Pears are greatly improved by grafting on the mountain ash.

Rats and other vermin are kept away from grain by a sprinkling of garlic when packing the sheaves.

Wet Land.—Money skilfully expended in drying land by draining or otherwise, will be returned with ample interest.

Grass.—Sweet and nutritious grass gives a richness and flavor to milk, attained from no other source.

Curing Fodder.—Bundles may be so placed around centre poles as to form a hollow stack, having a foundation of brush, sticks, &c., admitting a circulation of air that will thoroughly cure fodder in the shade.

Turnips of small size have double the nutritious matter that large ones have.

Rata Baya is the only root that increases in nutritious qualities as it increases in size.

In transplanting trees, the hole should not be proportioned to the extent of the roots *as they are*, but to their extent *as they may be and should be*.

Toads are the very best protection of Cabbages against lice.

Peach Trees are protected from hard winters by covering the roots a foot deep with straw, in January, after the ground has become thoroughly frozen, which keeps the frost in the ground, and so prevents the sap from starting until the Spring is fairly opened.

The *Udder* of a beef cow, salted, smoked and dried, is rich, delicious eating.

Lard never spoils in warm weather if it is cooked enough in frying out.

Tomatoes make an excellent preserve.

Sweet or Olive Oil is a certain cure for the bite of a Rattlesnake. Apply it internally and externally.

To cure Scratches on a Horse.—Wash the leg with warm strong soap suds, and then with beef brine. Two applications will cure the worst case.

A lump of Saleratus or Pearlash, crowded into the pipe of a *Poll Evil* or *Thistlecous*, two or three times, will cure this incurable disease.

Corn Meal should never be ground very fine. It injures the richness of it.

Rice is often over-boiled. It should be boiled but 10 minutes, and in no more water than it will absorb while boiling. Put two cups of rice in three cups of water.

Sulphur is valuable in preserving grapes, plants, &c., from insects.

Old Brine.—If sweet and good, and has kept your old pork good, it will keep the new without boiling. If the brine is full of matter which it has received from the old pork, it cannot extract the best juices of the new, and is quite as sweet.

Salt is really necessary to horses, cattle and sheep, and they should be supplied with it at regular stated intervals throughout all seasons of the year.

Mature, on a wet soil, produces but half its effect; and gypsum, that grand stimulant of dry soils, on a wet one is useless.

Save your Fire Wood.—Mr. Madison, in his Notes of Agriculture, says: "Of all the errors of our rural economy, none perhaps is to be so much regretted, because none so difficult to be repaired, as the excessive and injudicious destruction of fire wood."

Sorrel may be killed out by lime, while ashes has no effect on it.

Shumac or Sumac, a poisonous shrub or plant, which grows wild in abundance, and frequently where nothing else will, is used for dyeing in England, at the rate of thirteen thousand tons per annum. It might be made a source of profit to our farmers.

Lime.—A Pennsylvania farmer raised 400 bushels of wheat from a field of land which five years ago produced but thirty bushels. He spread fifteen hundred bushels of lime on said land.

Sunflower yields 140 bushels per acre, and each bushel of seed one gallon of good oil. Cost of expressing, 25 cents per gallon. Its leaves furnish provender, and its seed is capital food for poultry, cattle, and hogs. It is a profitable crop on poor soils, requiring but little labor.

An *Emetic* may be made in emergency by taking two teaspoonfuls of mustard mixed with water.

Rye is most thrifty on soil of a dry, sandy or gravelly texture, if well manured, and winters better the earlier it is sowed. It is the least healthy of all the grains. Sown early for winter a bushel per acre, and in spring a bushel and a half, will generally be sufficient. The earlier harvested, the whiter the flour; later, the grain may be heavier from the thickness of the skin, causing more bran but no increase of flour. Roofs well thatched with rye-straw last 20 years.

Corn.—Sprinkling with salt and water will check the Weevil.

Keeping Fruits.—The three best, of eight different modes, fairly tried, are, 1, covering in pure dry sand; 2, in dry fern; 3, in a deal box buried in the earth; in all cases placed in a cool situation.

Caterpillars and other insects are effectually destroyed by a drenching of tobacco juice.

Butter.—Heating the milk in winter, after straining, to 130 degrees, improves the quantity and quality of butter, and reduces the time and labor of churning.

Borer.—Kill this insect's eggs in apple and quince trees by a solution of potash, applied with a brush about the foot of the tree, occasionally, from April to June.

Draining is important, and covered drains are more lasting and valuable than open ditches. Cut drains three or four feet deep, place a row of poles at bottom, then a layer of brush to within ten inches of the top, then a few inches of straw or dry leaves, and cover with earth well rammed down.

Bone Dust.—An English proverb says, "One ton of bone dust saves the importation of ten tons of grain."

Ashes, although leached, form an excellent manure.

Pumpkins may be kept a year, sound and well flavored, if carefully gathered and hung up in a dry cellar. Or, take out the soft parts, slice, and dry in the sun or oven. Keep dry, and boil; a rich good food.

Ducks, when young, should have but little water, and be fed exclusively on boiled food, potatoes, &c. Hominy for fattening is good.

"*Salt* is health to a gosling, but death to a chicken," is an old true saying.

Cider.—Cleansë barrels with lime, then rinse well out. Half a pint mustard seed will preserve it good a long time. Filtering through a hair sieve and racking off improves it.

Roots.—Feeding with roots, especially with sugar beet, cannot be too highly prized, being rich, juicy; fattening, and economical.

Turnip Fly may be expelled by the use of fish oil, one or two gallons to the acre.

Pork Cured.—Soon as cool enough to eat, and before it freezes, pack a clean cask full, with plenty of salt on all sides of each piece. Fill up with water, taking care, by means of a large stone, to keep the pork under the pickle, and covered from flies, in a cellar. Never boil pickle.

Pork Feeding.—It is a well ascertained fact that more meat will be made on half the weight of corn, if ground and made into mush instead of being fed whole.

Hollow Horn.—Where supposed to exist, feed half peck potatoes twice a week, and treat your cattle kindly in food and shelter.

Timber.—To preserve, soak in lime and water long enough for the lime to penetrate.

Sheep must be fed well, kept dry, have salt often and pure air, and be grazed in hilly stony pastures.

For packing plants, use saw dust.

As a general rule, with but few exceptions, square large fields are more advantageous than small irregular ones, requiring less fence, and being more easily watered, manured, ploughed, and harvested.

—
A CERTAIN CURE FOR A RATTLE-SNAKE BITE OR SPIDER STING.—Take the yolk of a good egg, put it in a tea-cup, and stir in as much salt as will make it thick enough not to run off, and spread a plaster and apply to the wound, and I would ensure your life for sixpence. The subscriber has tried the above remedy in a number of cases, and never knew it to fail in one.—P. Prettyman, M. D.

OUR RECIPT FOR CURING MEAT.

Those who will carefully adopt our method of curing pork and beef, will be enabled to enjoy as fine hams, tongues, "dried beef," and rounds, as the Emperor of all the Russias can command, always providing that the meat cured is of the best quality. It is this:

To one gallon of water, take
 $1\frac{1}{2}$ pounds of salt,
 $\frac{1}{2}$ pound of sugar,
 $\frac{1}{2}$ ounce of saltpetre,
 $\frac{1}{2}$ ounce of potash.

In this ratio the pickle to be increased to any quantity desired. Let these be boiled together, until all the dirt from the sugar (which will not be a little) rises to the top and is skimmed off. Then throw it into a tub to cool, and when cold, pour it over your beef or pork, to remain the usual time, say four or five weeks. The meat must be well covered with pickle, and should not be put down for at least two days after killing, during which time it should be slightly sprinkled with powdered saltpetre.

Several of our friends have omitted the boiling of the pickle, and found it to answer equally as well. It will not, however, answer *quite* as well. By boiling the pickle, it is *purified*; for the amount of dirt which is thrown off by the operation, from the salt and sugar, would surprise one not acquainted with the fact.—*Germanicsa Telegraph*.

MARBLIZING THE SURFACE OF STONE.—J. Claudet, of Paris, has obtained a patent for covering the surface of common stone or plaster of Paris figures with a coating of marble, as follows:—

He lays upon the surface of the stone successive coats of milk of lime, allowing each to dry before the other is put on. When these coats have attained to a proper thickness, he smooths them down and polishes them until the surface resembles marble in brilliancy. Carbonic acid is then thrown upon the outer surfaces, when it becomes real marble. The milk of lime may be colored so as to produce the exact appearance of variegated marble.

DR. CHARLES KIDD, of England, announces that chloroform is a perfect cure for hydrophobia. A teaspoonful of either ether or chloroform is to be sprinkled on a handkerchief and placed on the patient's face to smell, and a red hot poker is then, within half an hour, to be applied to the bite.

[*National Intelligencer*.

AN UNFORTUNATE ROOSTER.—There are objections to Shanghais, no doubt, but we had never thought of this. It is very curious but it is true. The way of it was this: Mr. S—— an old resident of Stillwater, on the upper Hudson, introduced among his family of hens a few Shanghais, including a rooster, of formidable dimensions, who had "run to legs" a good deal. His crow was peculiar, and easily distinguished from that of other cocks. One morning he had waited to hear a repetition of the usual snarmons, after being aroused by the "shrill clarion" once sounded, but he heard it not again. The other roosters were doing their best, but the pre-eminent chanticleer was still. Mr. S—— went out to see what had caused the silence. He found the rooster lying on his back, with both legs out of joint. After an examination, he set both legs; the cock walked off, and gave vent to his satisfaction in a lusty crow. In the very act he dropped as if he had been shot.—He had crowed his legs out of joint again! He was kept three or four days, and then killed. "It was too much trouble," said Mr. S. "to set him up every time he crowed!"—*Knickerbocker Mag.*

HOME-MADE CHLORIDE OF LIME.—Prof. Nash says, take one barrel of lime and one bushel of salt: dissolve the salt in as little water as will dissolve the whole; slack the lime with the water, putting on more water than will dry slack it, so much that it will form a very thick paste; this will not take all the water; put on, therefore, a little of the remainder daily until the lime has taken the whole. The result will be a sort of impure chloride of lime; but a very powerful deodorizer, equally good for all out-door purposes, with the article bought under that name at the apothecary's, and costing not one-twentieth part as much. This should be kept under a shed or some out-building. It should be kept moist, and it may be applied wherever offensive odors are generated, with the assurance that it will be effective to purify the air, and will add to the value of the manure much more than it costs.

FOUL WELLS.—A correspondent of the *Traveler* adduces facts which go to show that poisonous gas in wells may be temporarily removed, by dashing down a few pails of cold water. Then they may be cleaned out safely.

TO MAKE PAPER FIRE-PROOF.—Dip paper into strong alum water, and it will resist the action of fire.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., DECEMBER, 1855.

Many articles *unavoidably* postponed.

We regret to learn that the Chinch-bug has made its appearance in the wheat ten miles east of this city, and is injuring it seriously.

WOOD-CHARCOAL AS A FERTILIZER.

PENSON COUNTY, N. C., Aug. 25, 1855.

MR. T. J. LEMAY. *Dear Sir*:—Although not personally acquainted with you, I trust that you will excuse the liberty I take in asking a few questions.

First: Will charcoal dust, or, rather the refuse left where a number of kilns of wood have been burnt at the same place into coal, consisting of a quantity of pine bark, small particles of coal, ashes and dirt, which was burnt, (the wood being covered with the dirt when it was burnt) pay, as a fertilizer, to haul and spread upon land?

2d If so, what would be the best plan for doing so?

Should you think the foregoing worthy an answer, you will confer a favor by giving it in the next number of the Arator.

Allow me, sir, to subscribe myself your subscriber and friend.

HENRY CARVER.

ANSWER BY THE EDITOR OF THE ARATOR.—We have but little experience in the use of Charcoal as a fertilizer, and must, therefore, speak mainly from our knowledge of the nature and properties of that substance, and the reported experience of others.—We have applied it with marked benefit to fruit trees, and have often observed the lasting improvement which the old beds of coal kilns impart to the little spots of earth where they were burned; and find it to be the unanimous opinion of all intelligent writers on the subject, that coal dust is a valuable fertilizer, whether used in the compost heap, or spread by itself on the land; and that, for either purpose, where there are the ordinary conveniences, it will pay both the burning and hauling. The virtue of ashes none can doubt. But as to the pine bark, that can be of no advantage whatever, for a long time at least—and until thoroughly rotted, it would be decidedly injurious to the growing crops, by intercepting and preventing the roots from taking hold of the soil. The bark should be raked up and burnt to ashes, and may then be profitably mixed

and spread with the coal; the manner of which will be presently discussed. We saw a field that had been a pine thicket, last summer, in corn—one half of which had been cut down and suffered to remain just long enough for the bark to fall off and cover the ground: the timber was cleared off and the bark suffered to remain; and in that condition, it was put in corn, with the other half freshly cleared of its live timber. The field, when we passed through it, was in the roasting ear state, and the difference between the two clearings was marked to the very line; that on which the bark was left, being yellow, spindling and sickly; while that on the other part of the field, of the same quality of soil precisely, was green, vigorous and heavily eared.

But, to return to the charcoal. Professor Johnson says: "Wood-charcoal, from its porous nature, and its tendency to absorb animal odors and other unpleasant effluvia,* has been found, when reduced to fine powder, to be an excellent admixture for night soil, for liquid manure, and for other substances which undergo putrescent decay. It is therefore employed to a considerable extent by the manufacturers of artificial manures. It is also applied with advantage, in some cases, as a *top-dressing* to various crops—its efficiency being probably due in part to its power of absorbing from the air, or of retaining in the soil, those gaseous substances which plants require, and in part to the slow decay which it is itself capable of undergoing. In moist charcoal powder, seeds are said to germinate with great ease and certainty." Charcoal contains a large proportion of carbonic acid, as well as the salts and other inorganic matter of which the wood was composed; all of which are indispensably necessary to the subsistence of vegetable and animal bodies.—Carbon forms from 40 to 50 per cent. by weight, of all plants in a dried state, constituting, therefore, a very important part in the work of enriching the soil.

Hence, powdered charcoal may always be liberally employed in the manufacture of compost manures, with a certainty of *paying*.

It must also be more or less beneficial as a top-dressing. It has been thus applied to wheat, in France, with considerable advantage, and in England, Mr. Fleming reports an experiment by himself, in which fifty bushels increased his crop of Swedish

*Thus of ammonia it absorbs 95 times its own bulk, of sulphureted hydrogen 55 times, of oxygen 9 times, of hydrogen nearly twice its bulk, and of aqueous vapour so much as to increase its weight from 10 to 20 per cent. It also takes from water any decayed animal matter or coloring substances which it may hold in solution, and keeps them in condition to yield to the plants which grow around it.

turnips by three tons an acre. A writer, we believe, in the Southern Planter, says he mixed it with his barn-yard manure at regular intervals, and when he applied it to his corn crop the result was very marked indeed. He also, three years ago, applied a bushel of the dust, mixing it with the topsoil, to each of his young apple trees, in a part of his orchard. The trees so treated, have outstripped all others in the orchard; the foliage being a dark green, and the trees looking every way much better than others that had as good treatment in all respects, except charcoal. He adds, "I have no doubt that the free use of charcoal would correct many of the numerous maladies to which animals and vegetables are now subject. I believe it the *great medicine of the soil*. Powerful in itself, it is an important auxiliary, if not entirely indispensable, to other fertilizers.—Beyond any available substance it is effectual to *kill* those gaseous materials that poison the air, but are the life of plants." He recommends to all, who have timber to spare, to *convert it into charcoal*.

As a top-dressing, it should be chiefly used with the small grains, turnips, or grasses; and should be spread as evenly as possible by itself, or with about an equal part or more (and *more the better*) of rich mould from the woods, after the seed are sown and harrowed, and *then rolled*. The mixture of the earth from the woods will serve to prevent the dust from being blown away by high winds, and also contribute materially to the improvement of both the crops and the soil. It may be hauled out and deposited in equalized heaps, at short regular intervals, and spread, by a careful hand, with the shovel. Land thus treated once a year, for two or three, would no doubt be greatly improved at little expense.

The above article was prepared for our November number, but crowded out by the transactions of the State Agricultural Society at the Fair.

LABOR AND AGRICULTURE IN RUSSIA.

We learn from the official report of Mr. Jacobs, to the British Parliament, that the rent of 8,000,000 acres government land, free from taxes, is less than three pence per acre—that in actual cultivation being from 8 to 14 pence per acre. In the Provinces of Padolia and Volhynia, the price of a *serf*, sold with the land as is usual, is \$600; laborers are hired for \$27.50 a year, and find themselves; it costs only one penny and a half (about three cents) a day to keep a white slave or serf. The lands in these provinces are very fertile; and the wheat is trodden out by oxen, and, when cleaned, is stowed away in caves, where it is destroyed by worms, if no market offers. Their implements are of the lowest description, and the cattle are attached by ropes, no leather being used; the plows ill-constructed, with but

little iron; and harrows entirely of wood. The man who sows, carries his seed in an apron or tail of his frock.

This, our readers must all agree, is a very ugly picture of our favorite pursuit in a far off land.—But "tell us true," have they never seen anything that resembled it in the rural districts of our own more favored country? We have seen the time when a good sturdy plow-man, here in the Metropolitan district, could be hired for *two shillings a day*. But thanks to the public benefactors who have put our ball of improvement in motion, the price of labor has been raised and is likely to be permanently fixed upon a just and liberal standard. We have seen the plow harness about half made up of twisted grape vines, mulberry bark and hickory wythes, and the plows themselves too weak to break a root or turn a clod. We have seen the half-starved teams and plowmen scratching four or five times a year over some twenty or thirty acres each, for the scanty return, sometimes, of *not as many barrels of corn* as acres cultivated. But, thanks, to the spirit of improvement, those times and practices are passing away; and we hope the period is at hand, when every farmer will be ashamed to use inferior implements and still more ashamed to cultivate a field that will bring less than twenty bushels of corn to the acre. Hereafter none of their grain need be left to be destroyed by the worms. Our railroads will carry it to our own market towns, through which our agricultural importance will be proclaimed and our commercial independence established.

AGRICULTURAL FAIRS.

The Hillsborough Recorder publishes a long list of premiums awarded at the Orange County Agricultural Fair, which indicate a full exhibition and proper spirit on the part of the people of Orange. There are master spirits at the head of agricultural reform in old Orange and young Albemarle, which ensures the success of the cause in that quarter.—The annual address was delivered by J. W. Norwood, Esq. It was an able production.

It appears from the published premiums awarded at the Fairs of Davie and Rowan Agricultural Societies, that very great and encouraging results have been attained in those counties; as the following extract will show:

DAVIE COUNTY.

Greatest yield of Corn to 1 Acre, to Geo. Wilson, 153 bushels,*

\$5

*Cost of improvement \$80, but it is paid back in one year. We respectfully request Mr. Wilson to give us a detailed account of the land, manuring and mode of cultivation, for publication in the Arator. He will thus confer a favor on the farmers of the whole State.

d Levin Ward, 115 bushels,
 st Improved acre, 143 bushels, Geo. Wilson,
 d " 71 " Max'l. Cuthrell,
 greatest yield of wheat, 1 acre, 50 2-38 bush-
 els, Max'l. Cuthrell,
 d greatest yield of wheat, 1 acre, 30 bushels,
 George W. Johnson,
 d greatest yield of wheat, 1 acre, 26½ bushels,
 Berry Foster,
 greatest yield of tobacco, 1 acre, 952 pounds,
 Max'l. Cuthrell,
 greatest yield of Irish potatoes, ½ acre, 67½
 bushels, Wm. Clouse,
 greatest yield of Sweet potatoes, 65 bushels,
 J. P. Ellis,

ROWAN COUNTY.

F. E. Flemming, largest amount of Corn on one
 acre, 92½ bushels, \$5
 D. Johnson, 2d largest, 90 bushels, 3
 E. Adams, 3d " 70 " 2
 " largest on 10 acres, 550 bushels, 5
 D. B. Wood, largest amount of Corn on 8 acres,
 443 bushels, 3
 G. Foard, largest amount raised on 6 acres,
 252 bushels, 2
 D. Johnson, largest amount of wheat on 1
 acre, 62½ bushels, 4
 V. P. Burke, 2d largest amount of wheat on 1
 acre, 31½ bushels, 3
 D. Rankin, 3d largest amount of wheat on 1
 acre, 39½ bushels, 2
 B. Chambers, 4th largest amount of wheat
 on 1 acre, 30 bushels, 1
 E. Adams, largest amount of Oats on 1 acre,
 67 bushels, 2
 We regret to learn that the Caswell Fair was a
 failure—only the Ladies doing their duty. Try
 again. Caswell can and will excel.

The Union Fair at Henderson as heretofore notice,
 was worthy of the spirited and intelligent citi-
 zens of the counties of Granville, Warren and
 Franklin, by whom it was held. Their list of pre-
 miums shall appear at length in our next number.

The Moore County Fair, held on the 8th and 9th
 Nov., is said to have been highly creditable to the
 Agricultural Society of that County. A writer in
 the Argus says, "it was highly gratifying to witness
 the interest manifested for the improvement of Ag-
 riculture.

Fairs are certainly one of the very best means of
 arousing a spirit of enquiry, and infusing an ener-
 gy into the farming community, that will result in
 such improvement and permanent good to the far-
 mers of the Old North State."

3 The Martin County Fair is represented to have
 8 been very respectable. The speech of the Hon. Asa
 5 Biggs, it is said, was an able and appropriate ad-
 dress.

6 The Union Agricultural Society of Virginia and
 North Carolina, at its late meeting and Fair at Pe-
 4 tersburg, elected James O. Bruce, Esq., of Halifax
 county, Va., as President for the ensuing year.—
 2 Amongst the Presidents are the following gentlemen
 of North Carolina:

4 Dr. Pritchard, of Warren; Dr. George Robinson,
 of Caswell; Gen. Thomas Person, of Northampton;
 2 N. M. Long, of Halifax; Robert A. Hamilton, of
 Granville; Joshua Perry, of Franklin; R. M. Sloan,
 3 of Guilford; Judge Settle, of Rockingham; C. L.
 Hinton, of Wake; Cad. Jones, of Orange; E. W.
 Holt, of Alamance; J. H. Haughton, of Chatham;
 David Hinton, of Edgecombe; Hon. A. H. Arring-
 ton, of Nash.

THE STATE FAIR AND CHOWAN AND MARTIN FAIRS.

5 We tender our thanks (says the N. C. Standard,) to
 our very intelligent Correspondent, "S.," for the
 3 following communication in relation to the State
 Fair and the Chowan and Martin County Fairs.—
 2 We were pleased to see the writer at the State Fair.
 He is a practical man, possessed of commendable
 4 State pride, and among the most useful and public-
 spirited citizens of Eastern Carolina. He has done
 3 entire justice, and that in a short space, to the State
 Fair; and we are glad to learn from him also that
 the Chowan and Martin County Fairs were so suc-
 2 cessful. His suggestions in regard to the County
 1 Societies—that they should be rendered auxiliary to
 the Fairs of the State Society, are worthy of con-
 sideration. We trust they will be acted upon, and
 that we shall see the results here next October, in
 largely increased contributions to every department
 of the exhibition.

For the Standard.

NORTH CAROLINA FAIRS.

Editors of N. C. Standard:

GENTLEMEN: I visited the recent State Fair in
 Raleigh, for the first time since its establishment,
 and I think the exhibition was a most interesting
 and useful one.

The isolated situation of Raleigh, and its inac-
 cessibility to many portions of the State, and par-
 ticularly those portions where agriculture has at-
 tained its highest perfection, prevented as large an
 exhibition as would otherwise have been made.—
 When our system of Railroads shall have been com-
 pleted, and our people be enabled to avail them-

selves of the advantages they may offer, then will our State Fair be what its most sanguine friends hope for. Under all the disadvantages, however, our Fair was, altogether, a very creditable one. I had entertained fears of its failure, and opinions not very flattering to it were expressed, but upon the whole I was very agreeably disappointed. If a failure consists in the *quantity*, without regard to *quality*, then, it may have been one; but if, on the contrary, the *quality* of the articles exhibited be an evidence of success, then it was most successful.—There was quite a number of Devon, Durham, Grade, and Native cattle exhibited, many of which were the finest of their kind. I noticed, particularly, those exhibited by Dr. Holt and Mr. Russell. These gentlemen deserve great credit for their efforts to introduce, in the State, their fine blooded stock, to take the place of our little, poor, native cattle.

The stock of Stallions, Jacks, Brood Mares and Colts, was very fine, and proved that our farmers were turning their attention to this branch of their business.

The Agricultural Implements, particularly Plows, Machinery, &c., though not as extensive as in many of the States, (which are less an agricultural than a mechanical and manufacturing people,) was very creditable. There was a variety of fine design and workmanship.

The exhibition in Mechanic's Hall was such as to excite a feeling of pride in the breast of every North Carolinian. The carriages, buggies, harness and saddlery, would compare favorably with the best manufactures in the Union.

Agricultural Hall was well and creditably filled. The vegetables, in great variety, were of the finest kind—Tobacco, Cigars, Flour, Wheat, Corn, Cotton, indeed, every variety of agricultural production, and in the highest perfection. Surely, in this department there was no failure.

Who can point to Floral Hall, that great centre of attraction, and say there was a failure? The amount of needle-work, counterpanes, quilts, bonnets, and various other elegant articles, the handiwork of the fair daughters of our beloved State, excited the admiration of all. The mill manufactures, drawings, paintings, were very good. And then such fruit!—Such apples, pears and peaches! Where can they be excelled? And our Scuppernon Wine—destined to supplant the use of much of foreign wines. And what added to the interest of Floral Hall was, that you were greeted by the smiles of lovely woman.

The usual interest was excited by the exhibition of fine carriage, trotting, and pacing horses—many of which were superior in speed and elegance.

I can scarcely trust myself to say anything of the Address of Judge Ruffin. It will be read with pride

and pleasure by every son of North Carolina; and will be hailed by the whole South, as one of its ablest defences. What a noble specimen of man he is!

Let it be no more said that the State Fair was a failure. Let every son of North Carolina feel that his own reputation is linked in with that of his native State; and that a failure of the State Fair would greatly detract from her character; and let every one feel that he has something to do to build up and sustain the reputation of his native State.

The week after the Raleigh Fair the Chowan Agricultural Society held its Fair at Edenton. The Society had only been organized some seven or eight months; and the Fair Grounds, though not fully completed for want of time, was fitted up with much taste and elegance. The exhibition was, indeed, a very creditable one. Every department was well represented; and I was agreeably surprised to see so fine a collection of blooded stock.

We had a most interesting address, from Mr. Albertson, of Hertford, replete with good advice, useful suggestions, and sarcastic criticisms. Men of character, sense and energy are at the head of this Fair, and they know no such word as 'fail,' and the next Fair will be all its friends desire.

The Fair of the Martin County Agricultural Society came off at Hamilton, on 1st November. They too, had too short time to fit up the Grounds and improvements as they designed; but the exhibition was very creditable. A quantity of stock of various kinds was exhibited—among them I noticed a large lot of very fine Devon, Durham and Grade cattle belonging to Thomas Jones, Esq., which will compare favorably with any I have seen.

The Ladies, in their department, fully sustained themselves. Floral Hall was there, as elsewhere, the point of attraction.

The address was delivered by the Hon. Asa Bigge, and he well sustained his high reputation, giving an admirable illustration of "progress."

I fear these County and District Fairs have had a tendency to injure the State Fair. Persons interested in these Fairs are apt to think that they must come in contact with the State Fair; and thinking so, they desire to excel. This should not be so.—These Fairs should be auxiliary to the State Fair—aid and helps for it. A suggestion has been made which would remedy this evil if it really exists.—Let an understanding exist between the managers of the State and County Fairs. Let the County Fairs come off first. Let the President, or one of the Vice Presidents, or Executive Committee, of the State Agricultural Society attend these County Fairs; and let every article of worth, and which will bear competition, and which is on exhibition at the Coun-

ty Fairs, be carried to the State Fair. By this means all rivalry will be broken down, and a laudable emulation will be excited.

Messrs. Editors, I have heard some censure thrown out on the Raleigh press and Railroads—that they did not encourage the Fair, and afford information and facilities which they ought. I hope that neither are obnoxious to the charge; and, at all events, I feel assured that hereafter everything will be done by them which ought to be done. Large crowds of people could be carried to Raleigh during the Fair, and large amounts of money would be spent there, if proper facilities were afforded. Could the people only know that they would be comfortably accommodated for their money they would flock to the Fair. But to be huddled up, ten in a room, and two or three on a bed, and many with no bed, at \$2 per day, is rather severe. Visitors do not expect private citizens to open their doors to them, and invite them to accept their hospitality—all they ask is to know that they can get comfortable quarters, at either public or private houses, by paying for it.

My highest pride is that I am a son of North Carolina, and my greatest pleasure would be to aid in elevating her character and developing her resources.

S.

Plymouth, Nov. 5th.

NATIONAL AGRICULTURAL FAIR—SPEECH OF HON. MR. EVERETT.

THE Fair of the National Agricultural Society, at Boston last of October, was a grand and imposing spectacle. Thousands upon thousands were present, (87,700 strangers), and the exhibitions were highly creditable and encouraging. We published in our November number an interesting speech of the Hon. EDW'D. EVERETT delivered in 1852. We give below the speech of the same distinguished orator, at the late Festival in Boston, which will be read by all with interest and pleasure.

MR. EVERETT'S SPEECH.

MR. PRESIDENT, AND LADIES AND GENTLEMEN:—My excellent friend, Mr. Winthrop, who has just taken his seat, was good enough to remark that he was waiting with impatience for me to speak. Far different was my feeling while he was speaking.

I listened not only with patience, but with satisfaction and delight, as I am sure you all did. If he spoke of the embarrassment under which he rose to address such an assembly—an embarrassment which all, however accustomed to public speaking, cannot but feel—how much greater must be my embarrassment. He had to contend only with the difficulties natural to the occasion, and with having to follow

the eloquent gentleman from Philadelphia, (Mr. McMichael.) I have to contend with all that difficulty, and with that of following not only that gentleman, who delighted us all so much, but my eloquent friend who has just taken his seat.

And when two such gentlemen have passed over the ground, the one with his wide sweeping reaper, and the other with his keen trenchant scythe, what is there left for a poor gleaner like myself, that comes after them?

With respect to the kind manner, Sir, in which you have been so good as to introduce my name to this company, it is plain that I can have nothing to respond, but to imitate the example of the worthy clergyman upon the Connecticut River, who, when some inquisitive friend, from a distant part of the country, asked him somewhat indiscreetly, whether there was much true piety among his flock, said, "Nothing in that way to boast of."

If this were a geological instead of an agricultural society, and if it were your province not to dig the surface but to bore into the depths of the earth, it would not be surprising if in some of your excavations, you should strike upon such a fossil as myself. But when I look around upon your exhibition—the straining course—the crowded bustling ring—the motion, the life, the fire—the immense crowds of ardent youth and emulous manhood, assembled from almost every part of the country, actors or spectators of the scene—I feel that it is hardly the place for quiet old-fashioned folks, accustomed to quiet, old-fashioned ways. I feel somewhat like the Doge of Genoa, whom the imperious mandate of Louis XIV. had compelled to come to Versailles, and who after surveying and admiring its marvels, exclaimed, that he wondered at everything he saw, and most of all at finding himself there.

Since, however, sir, with that delicate consideration toward your "elder brethren," which I so lately had occasion to acknowledge at Dorchester, you are willing to trust yourself by the side of such a specimen of paleontology as myself, I have much pleasure in assuring you that I have witnessed with the highest satisfaction the proof afforded by this grand exhibition, that the agriculture of our country, with all the interests connected with it, is in a state of active improvement. In all things, sir, tho' I approve a judicious conservatism, it is not merely for itself, but as the basis of a safe progress. I own sir, there are some old things, both in nature and art and society, that I like for themselves. I all but worship the grand old hills, the old rivers that roll between them, the fine old trees bending with the weight of centuries. I reverence an old homestead, an old burying ground, the good men of olden times. I love old friends, good old books, and I don't absolutely dislike a drop of good old wine for the stomach's sake, provided it is taken from an original package. But these tastes and sentiments are all consistent with, nay, in my judgment, they are favorable to a genial growth, progression and improvement, such as is rapidly taking place in the agriculture of the country. In a word, I have always been, and am now, for both stability and progress; learning from a rather antiquated, but not yet wholly discredited authority, "to prove all things, and hold fast to that which is good." I know, sir, that the modern rule is "try all things, and hold fast to nothing." I believe I shall adhere to old reading a little longer.

But, sir, to come to more practical, and you will probably think more appropriate topics, I will endeavor to show you that I am no enemy to new discoveries in agriculture or anything else. So far from it, I am going to communicate to you a new discovery of my own, which if I do not greatly overrate its importance, is as novel, as brilliant and as auspicious of great results as the celebrated discovery of Dr. Franklin; *not* the identity of the electric fluid and lightning, I don't refer to that, but his other famous discovery; that in the latitude of Paris the sun rises several hours before noon: that he begins to shine as soon as he rises; and that the solar ray is a cheaper light for the inhabitants of large cities, than the candles, and oil, and wax tapers, which they are in the habit of preferring to it. I say, sir, my discovery is somewhat of the same kind; and I really think full as important. I have been upon the track of it for several years: ever since the glitter of a few metallic particles in the gravel washed out of Capt. Sutter's mill race, first led to the discovery of the gold diggings of California; which for some time past have been pouring into the country fifty or sixty millions of dollars annually.

My discovery, sir, is nothing short of this, that we have no need to go or send to California for gold, inasmuch as we have gold diggings on this side of the continent, much more productive, and consequently much more valuable than theirs. I do not of course refer to the mines of North Carolina or Georgia, which have been worked with some success for several years, but which compared with California are of no great moment. I refer to a much broader vein of auriferous earth, which runs wholly through the States on this side of the Rocky mountains, which we have been working unconsciously for many years, without recognizing its transcendent importance; and which it is actually estimated will yield the present year, ten or fifteen times as much as the California diggings; taking their produce at sixty millions of dollars.

Then sir, this gold of ours not only exceeds the California in the annual yield of the diggings, but in several other respects. It certainly requires labor, but not nearly as much labor to get it out.—Our diggings may be depended on with far greater confidence, for the average yield on a given superficies. A certain quantity of moisture is no doubt necessary with us, as with them, but you are not required as you are in the *placers* of California to stand up to your middle in water all day, rocking a cradle filled with gravel and gold dust. The cradles we rock are filled with something better. Another signal advantage of our gold over the California gold, is that after being pulverized and moistened, and subjected to the action of moderate heat, it becomes a grateful and nutritious article of food;—whereas no man not the long-eared King of Phrygia himself who wished that everything he touched might become gold,—could masticate a thimble full of the California dust, cold or hot, to save him from starvation. Then sir, we get our Atlantic gold on a good deal more favorable terms than we get the California. It is probable, nay, it is certain, that for every million of dollars' worth of dust that we have received from San Francisco, we send out a full million's worth in produce, in manufactures, in notions generally, and in freight; but the gold which is raised from the diggings this side, yields, with good management, a vast increase on the outlay, some thirty fold, some sixty, some a hundred. But

besides all this, there are two discriminating circumstances of a most popular character, in which our gold differs from that of California, greatly to the advantage of ours. The first is this:

On the Sacramento and Feather rivers, throughout the *placers*, in all the wet diggings and the dry diggings, and in all the deposits of auriferous quartz, you can get but one solitary exhaustive crop from one locality; and in getting that you spoil it for any further use. The soil is dug over, worked over, washed over, ground over, sifted over—in short turned into an abomination of desolation, which all the guano of the Chincha Islands would not restore to fertility. You can never get from it a second yield of gold, nor anything else, unless perhaps a crop of mullein or stramonium. The Atlantic diggings, on the contrary, with good management, will yield a fresh crop of the gold every four years, and remain in the interval in condition for a succession of several other good things of nearly equal value.

The other discriminating circumstance is of still more astonishing nature. The grains of the California gold are dead, inorganic masses. How they got into the gravel: between what mountain mill-stones, whirled by elemental storm winds on the bosom of oceanic torrents, the auriferous ledges were ground to powder; by what Titanic hands the coveted grains were sown broad east in the *placers*, human science can but faintly conjecture. We only know that those grains have within them no principle of growth or re-production, and that when that crop was to be put in Chaos must have broken up the soil. How different the grains of our Atlantic gold, sown by the prudent hand of man, in the kindly alternation of seed-time and harvest; each curiously, mysteriously organized; hard, horny, seeming lifeless on the outside, but wrapping up in the interior a seminal germ, a living principle. Drop a grain of California gold into the ground, and there it will lie unchanged to the end of time, the clods on which it falls not more cold and lifeless. Drop a grain of our gold, of our blessed gold, into the ground, and lo! a mystery. In a few days it softens, it swells, it shoots upwards, it is a living thing. It is yellow itself, but it sends up a delicate spire, which comes peeping, emerald green, through the soil; it expands to a vigorous stalk, revels in the air and sunshine, it arrays itself more glorious than Solomon in its broad fluttering, leafy robes, whose sound, as the west wind whispers through them, falls as pleasantly on the husbandman's ear as the rustle of his sweetheart's garment; still towers aloft, spins its verdant skeins of vegetable floss, displays its dancing tassels, surcharged with fertilizing dust, and at last ripens into two or three magnificent batons like this, (an ear of Indian corn,) each of which is studded with hundreds of grains of gold, every one possessing the same wonderful properties as the parent grain, every one instinct with the same marvellous reproductive powers. There are seven hundred and twenty grains on the ear which I hold in my hand. I presume there were two or three such ears on the stalk. This would give us 1440, perhaps 2160 grains as the produce of one. They would yield next season, if they were all successfully planted, 4200 perhaps 6300 ears. Who does not see that with this stupendous progression, the produce of one grain in a few years might feed all mankind. And yet with this visible creation annually springing and ripening around us, there are men who doubt, who deny the existence of God. Gold from the Sacramento river,

sir! There is a sacrament in this ear of corn enough to bring an atheist to his knees.

But it will be urged perhaps, Sir, in behalf of the California gold by some miserly old fog, who thinks there is no music in the world equal to the clink of his guineas, that though one crop only of gold can be gathered from the same spot, yet once gathered it lasts to the end of time; while (he will maintain) our vegetable gold is produced only to be consumed, and when consumed is gone forever. But this, Mr. President, would be a most egregious error both ways. It is true the California gold will last forever unchanged, if its owner chooses: but while it so lasts, it is of no use, no not as much as its value in pig-iron, which makes the best of ballast; whereas gold, while it is gold, is good for little or nothing. You can neither eat it, nor drink it, nor smoke it.—You can neither wear it nor burn it as fuel, nor build a house with it; it is really useless till you exchange it for consumable, perishable goods; and the more plentiful it is the less its exchangeable value. Far different the case with our Atlantic gold; it does not perish when consumed, but by a nobler alchemy than that of Paracelsus is transmuted in consumption to a higher life. "Perish in consumption," did the old miser say? Thou fool, that which thou sowest is not quickened *except* it die. The burning pen of inspiration, ranging heaven and earth for a similitude, to convey to our poor minds some not inadequate idea of the mighty doctrine of the Resurrection, can find no symbol so expressive as "bare grain, it may chance of wheat or some other grain." To-day a senseless plant, to-morrow it is human bone and muscle, vein and artery, sinew and nerve; beating pulse heaving lungs, toiling, ah, sometimes over-toiling brain. Last June it sucked from the cold breast of the earth the watery nourishment of its distending sap-vessels; and now it clothes the manly form with warm, cordial flesh, quivers and thrills with the five-fold mystery of sense, purveys and ministers to the higher mystery of thought. Heaped up in your granaries this week, the next it will strike in the stalwart arm, and glow in the blushing cheek, and flash in the beaming eye:—till we learn at last to realize that the slender stalk which we have seen shaken by the summer breeze, bending in the corn-field under the yellow burden of harvest, is indeed the "staff of life," which since the world began, has supported the toiling and struggling myriads of humanity on the mighty pilgrimage of being.

Yes, sir, to drop the allegory and speak without a figure, it is this noble agriculture, for the promotion of which this great company is assembled from so many parts of the Union, which feeds the human race and all the humbler orders of animated nature dependent on man. With the exception of what is yielded by the fisheries and the chase (a limited though certainly not an insignificant source of supply.) Agriculture is the steward which spreads the daily table of mankind. Twenty-seven millions of human beings, by accurate computation, awoke this very morning in the United States, all requiring their "daily bread," whether they had the grace to pray for it or not, and under Providence all looking to the agriculture of the country for that daily bread, and the food of the domestic animals depending on them; a demand perhaps as great as their own. Mr. President, it is the daily duty of you farmers to satisfy this gigantic appetite; to fill the mouths of these hungry millions—of these starving millions I might

say, for if by any catastrophe, the supply were cut off for a few days, the life of the country—human and brute—would be extinct.

How nobly this great duty is performed by the agriculture of the country, I need not say at this board, especially as the subject has been discussed by the gentleman who preceded me. The wheat crop of the United States, the present year, is variously estimated at from one hundred and fifty to one hundred and seventy-five millions of bushels; the oat crop at four hundred millions of bushels; the Indian corn, our precious vegetable gold, at one thousand millions of bushels! a bushel at least, for every human being on the face of the globe. Of the other cereal and of the leguminous crops I have seen no estimate. Even the humble article of hay,—this poor timothy, herds' grass and red top, which, not rising to the dignity of the food of man, serves only for the subsistence of the mute partners of his toil,—the hay crop of the United States is probably but little, if any, inferior in value to the whole crop of cotton, which the glowing imagination of the South sometimes regards as the great bond which binds the civilized nations of the earth together.

I meant to have said a few words, sir, on the nature of this institution, and its relations to our common country as a bond of union, (cries of "go on, go on.")

I have lost my voice and strength, and my good friend, who has treated that topic, never yet left anything to be said by those who come after him. I will only, in sitting down, take occasion to express the great interest I feel in the operations of this association. I see that it is doing, and I have no doubt it will yet do infinite good.

I beg, in taking my seat, sir, to tender you my most fervent wishes and hopes for its increased and permanent prosperity and usefulness.

Mr. Everett was listened to throughout with the most intense interest, and was very often interrupted with outbursts of applause, which seemed to come forth spontaneously from the large assemblage. At the close, the whole audience gave him six hearty and enthusiastic cheers.

While Mr. Everett was speaking, the gas was lighted, giving to the tent a most beautiful appearance. At the close of his remarks, many of the audience retired.

~~We~~ We would respectfully remind our subscribers that the subscription year for the Arator is drawing to a close; that the terms are \$1, if paid within the year, and \$1.50 if not paid till after the year expires.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Peaches, Plums, Apricots, Nectarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford county, N. C., or to Owen Lindley, Cane Creek, Chatham county, N. C.

JOSHUA LINDLEY,
OWEN LINDLEY.

Nov. 1, 1836.

24.

HENRY PORTER'S SHOE AND BOOT ESTABLISHMENT.

THE SUBSCRIBER has, and will continue to keep on hand, at his stand on the West Side of Fayetteville Street, an extensive and choice assortment of

BOOTS AND SHOES,

suitable for Ladies, Misses, Gentlemen, Boys and Servants, of every description and for all seasons; to which he respectfully invites the attention of purchasers, promising a good article on as good terms as can be afforded anywhere in this Market.

He also keeps first-rate workmen, and will mend or make Shoes or Boots to order, in the very best style.

He will likewise furnish the trade with materials at moderate rates. Everything warranted.

HENRY PORTER.

Raleigh, Dec., 1855.

9-3t.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY, PUBLISHER. BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF Theological, Law, Medical, Classical, Miscellaneous

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including Records for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of GENTS' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 30, 1855.

1-2

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,

Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,

SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or Proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, &c.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-4t.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina.

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

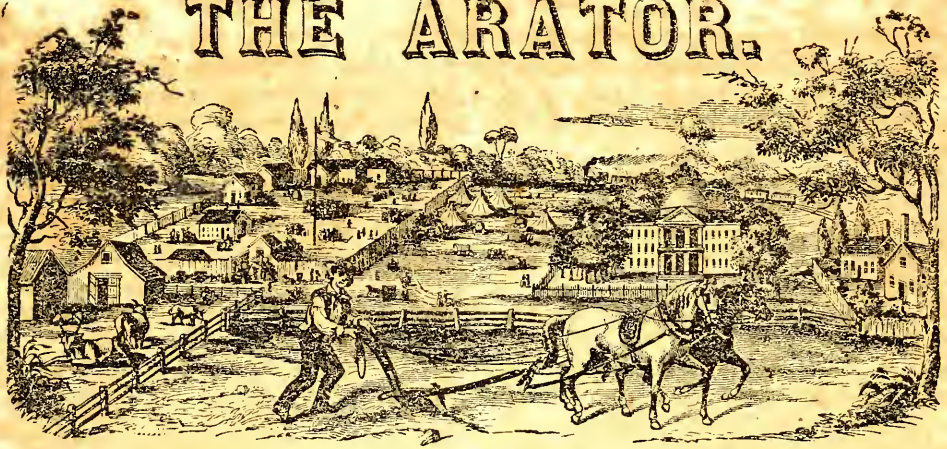
July, 1855.

4-4f

TABLE OF CONTENTS.

A New Rhododendron, 262; Agricultural Fairs, 282; Building, new mode of, 273; Bees, 274; Chareol as a Fertilizer, 281; Culture of Wheat, 257; Cow, native, 277; Everett's speech, 285; Grapes—Georgia Vineyards, 259; Grapes, Native, 261; Hams, smoking of, 260; Hints, Miscellaneous, 278; Home made Chloride of lime, 280; Labor and agriculture in Russia, 282; Poultry, 274; Prize Essay, 269; Pork Raising, 267; Peaches from cuttings, 262; Receipt for curing meat, 280; Stock, 263; Stone, marbleizing of, 280; Successful farming, 277; The Tomato, 262; The Premium Essay, 266; The Excelsior, 173; The Sugar Beet, 275; Underdraining, 262; Wheat and Weevil, 260; Wheat, great yield of, 268.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I. RALEIGH, JANUARY, 1856. NO. X.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, in advance, or \$1.50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

THE FAIR.

Our anticipations of the success of the Cumberland Agricultural Fair on Thursday and Friday last were more than realized. We have never witnessed here such an animated scene as our streets and the road to the Fair, and the Fair grounds and buildings, presented. Hundreds of vehicles and thousands of persons were on the move, all eagerly enjoying the beautiful weather, the excellent showing at the Fair, and the pleasure of seeing together so many friends and acquaintances, alive with enjoyment. It was an occasion full of proud satisfaction to those, and especially to the untiring Executive Committee, who have instituted and carried on to a successful result, this most useful enterprize. It was a Society of small beginnings indeed. Four or five years ago, some twenty persons united in it. For two or three years it had, if we mistake not, less than fifty members. Suddenly it has attained a large share of popularity, counting its members by hundreds, its income by thousands, and collecting together thousands of the most intelligent and enterprising citizens of this and the adjoining Counties. This great change has resulted from the bold undertaking, as

we and others regarded it, of holding the First Fair twelve months ago. It was a bold undertaking;—and its success surprised even its most sanguine projectors. This year again there have been many misgivings as to the success of the Fair. It was predicted, that the novelty having worn off, there would be little for exhibition and few to attend it. How happily these fears have been dispelled, every active member of the Society, and we think we may say, every individual in town and county, is ready to attest. The number of articles on exhibition, as well as the attendance, was materially larger than last year.

We have heard the opinion expressed by several persons who attended the late State Fair, that in most respects ours exceeded that, in the number and excellence of the articles exhibited. This was especially true, we are told, as to the Floral Hall part of the exhibition, the Stock and the Fowls. In Vehicles, Machinery, and Trotting horses, only, was ours materially inferior to that—and the Machinery at the State Fair was principally from the North.

We do not propose further to enumerate here the articles exhibited, but can only refer to the list of Premiums in another part of this paper.

In addition to all other favorable circumstances, we are happy to state, that the property of the Society, consisting of about 20 acres of land, securely fenced, with numerous buildings, sheds, &c., is all paid for, by the receipts at the two Fairs and the liberal subscriptions of citizens of the town and country. Hereafter, therefore, nearly the whole of the receipts at each Annual Fair may be distributed in

Premiums. Heretofore the premiums have been necessarily small. They need be so no longer.

The receipts at the gate this year have been between \$700 and \$800.

On Thursday, at 12 o'clock, the assemblage was briefly addressed by Messrs. E. L. Winslow, and Jas. Banks. We regret that our duties elsewhere detained us from the ground until after these addresses had been delivered.

On Friday at 1 o'clock, the list of Premiums was read by Mr. Winslow, prefaced by some appropriate remarks.

Among the interesting incidents of the occasion, was a procession of the hundred and odd Students of the Fayetteville Female High School, escorted by the Independent Company, from the School Building to the Fair Grounds, to which they had been invited. It was a beautiful sight, full of pleasant associations to the friends of our town. May the prosperity of the two Institutions be perpetual! Should they exist as long as the Independent Company has, and retain so large a share of the public regard, the present generation, at least, will have no reason to complain.

On Thursday evening the Agricultural Society held its annual meeting.—Col. A. S. McNeill, first Vice President, in the Chair, and Mr. John P. McLean, Secretary.

Reports from Committees appointed at the last meeting were received. One from Wm. McMillan, Esq., on the culture of Corn on sand-hill land, the result being 48½ bushels to the acre. Another from Joel Williams, Esq., on Grasses. Mr. W. had made an average of 5032 lbs. of cured hay to the acre on four acres. Another from Col. McNeill on the Red Top, or Herd's grass, with which he has been experimenting, not very successfully this year, but with the promise of abundant success for the year to come. Another report from John C. Smith, Esq., on his experiments in Oats, obtaining a double yield from his application of manure.

Other reports by Mr. T. J. Robinson, and Mr. J. P. McLean, on their modes of cultivating Irish potatoes, and their success. A good deal of discussion took place on these and other matters between the above gentlemen and Messrs. E. L. Winslow, A. A. McKethan, Jas. Banks, John Waddill, John Elliott, W. McL. McKay, Jas. G. Cook, E. J. Hale, and others.

Resolutions were adopted and ordered to be published, expressive of the feelings of the Society, at the recent death of its President, HENRY ELLIOT, Esq.

Resolutions of thanks were also adopted to those who had contributed articles for exhibition, and especially to those from other counties.

And a very decided expression of thanks and grati-

tude to the Executive Committee for the invaluable services of its Chairman and various members.

The following officers were elected for the ensuing year :

JOEL WILLIAMS, Esq., President.

Col. A. S. McNeill,	} Vice Presidents.
JOS. EVANS, Esq.,	
JOHN A. WILLIAMS, Esq.,	
JOHN P. McLEAN, Sec'y. and Treasurer.	

Messrs. E. L. Winslow, A. A. McKethan, E. W. Barge, J. A. Williams, Wm. McMillan, Jno. Waddill, Wm. Cade, John P. McLean, Jesse Carver, T. J. Robinson, Hugh McLean, John McKellar, John C. Smith, Executive Committee.

The next annual meeting will take place during the next Fair, the time of which will be fixed by the Executive Committee. But a meeting of the Society will be held in the Town Hall on Wednesday evening the 6th inst.—*Fayetteville Observer, Dec. 3d.*

From the Fayetteville Observer.

FAIRS.

THE extent to which these exhibitions of agricultural, mechanical, and domestic industry are carried, throughout the country, is truly astonishing. The Agricultural Fair at Boston was visited by two hundred thousand persons, and the receipts for entrance money, at 25 cents each, were nearly \$50,000. The Fair of the American Institute, in New York city, which is more mechanical than agricultural, has already been visited by upwards of 100,000 persons. It is held in the Crystal Palace, which is found to be so admirably adapted to the purpose, that an effort is making to purchase it for the Institute. The price is \$200,000. We shall be glad to find the building preserved for some useful purpose, for it is worth a visit of itself, as an architectural curiosity.

We hope that public spirited individuals in all parts of this State will take care to keep alive the interest in the annual State and County Fairs.—They are as yet comparatively small exhibitions and small assemblages of people; but so at first were those of New York and Massachusetts. And although we may not hope to rival their present greatness, there cannot be a doubt of the good effected by even what has already been done. The best and wisest and most eloquent men in the State should be called upon to deliver Addresses; and every man or woman who has anything good of its kind, ought to show it, not so much as a matter of pride as for the encouragement of his or her neighbors to produce like excellent things. In this way better modes and implements of tillage will be diffused, the quantity and quality of crops improved, better stock raised, comfort and elegance in household economy be pro-

moted; and in short, our land be made to approximate to that condition of prosperity which is everywhere apparent to the eye in those States where such Fairs are common, even though less favored in soil and climate than ours.

We earnestly call upon the people of this county and town, to bestir themselves, and make the coming and every successive Fair of the Cumberland Agricultural Society, superior to its predecessor in the number and quality of the articles exhibited, and the number of visitors. Let no one who has put his hand to the plow look back.

Among those who are vastly benefitted by these Fairs, are the business men of the towns in which they are held. This fact,—and any one who will open his eyes must see that it is a fact,—should induce every individual in those towns to contribute liberally to their getting up and proper accommodation. Look at what occurred in Boston on one day of the Fair there. 87,716 persons came into the city from the country and other towns on that day; and 82,106 left during the day; showing that 5,661 strangers who came in the morning stayed over night. Probably no individual of that immense throng left the city without spending some money; and some of them must have spent a great deal, for on that day the receipts of country bank notes at the Suffolk bank (deposits of merchants, &c.,) were \$360,000 more than the largest sum ever paid in previously during any one day.

Of the persons who came to Boston on that day, 25,968 were by railroad; 24,002 were in vehicles; and the remainder, 37686, came into the city on foot. The number of vehicles that came into the town was 6669.

Besides this recent case of money making in Boston by a grand display, the Baltimore Patriot mentions the following:—

“When Boston, a few years since, got up her famous Railroad celebration, the lavish expenditure required to sustain worthily so bold a glorification, created no little surprise among citizens of other States, who imagined that the good people of the old Bay State were certainly paying remarkably dear for their whistle. But the acute descendants of the Puritans knew perfectly well what they were about. To have made a local affair of it—winding up the day by a cozy dinner to be discussed by the municipal authorities, the officers of railway corporations, and a few selected guests, would have been to have thrown just so much money away; while to spend largely, to extend their invitations to all quarters of the American Union, and to make their arrangements on so grand a scale as would secure the attendance of President Fillmore and his suite from Washington, and Lord Elgin and his of-

ficial attendants from Canada, was a speculation which would not only justify a large outlay, but would secure, in its results, a brave array of figures on the profit side of the account. So judged the business men of Boston, and they judged wisely.—“If we would make money,” said they, “out of this affair—we must spend money;” and, acting upon this sage conclusion, they opened their purse strings, threw their hearts into the measure, called upon the journals of the country to take note of their doing, and succeeded in handsomely fulfilling all their calculations.”

DEEP PLOUGHING AGAIN.—Sir: I read a communication in the N. Y. Tribune, referring to the action of the judges on ploughing at the Westchester County Fair. I have been, myself, the past summer, a martyr to the cause of Deep Ploughing, as follows:

The farm on which we are at work has been under an exhausting system of cultivation for a long series of years, with the exception of the last four or five, during which time it has laid idle. Well: our neighbors found no fault with our picking up stone, nor our hauling out manure, but when we first put on a heavy span of horses and a heavy yoke of cattle to a Wayne County plow No. 5 (two sizes larger than they use,) and commenced ploughing for corn, then they began to pity our infatuation.—“Why,” said one of them to me, “I would not have you plough my ground in that manner if you would plow it for nothing—turning up that cold soil eight or ten inches deep is enough to ruin any land. Four or five inches deep is plenty for corn.” But when ridicule (for arguments they had none) did not convince me that I was wrong, they gave up my corn for lost.

Well, the result was this: the season being very wet, corn on shallow ploughed land came forward very slowly, looking quite yellow and sickly. We hoed ours the second time before theirs was large enough to hoe once, though planted at the same time; and the same ratio held good through the entire season; so that an early frost, which came just as we were cutting up, caught theirs in time to ruin nearly one-half of the crop. Our crop is, I should think, fully one-third heavier, and perhaps one-half, in addition to being all out of the frost.

Next spring we intend putting in a subsoil plow, (which pattern do you think the best?) as our soil is clayey, with a hard, lean subsoil. I expect our affectionate friends will tender us each a straight jacket in that case.

Yours truly,

HENRY H. DOUBLEDAY.

Great Bend, Susquehanna Co., Pa., Oct. 9, 1856.

From the Northern Cultivator.

VALUE OF STABLE MANURE.

CAN you inform me how many tons of the best stable manure, from *grain fed horses*, is equal to one ton of best Peruvian guano? It is probable this, or a similar question, may have been frequently answered, but I am unable to find it in any of your valuable productions.

ROBERT WATSON.

St. Stephens, N. B.

The value of the stable manure depends on the composition of the food consumed by the animals, and how much of the liquid excrements is retained, and on the quantity of litter used, besides other circumstances too numerous to mention.

It is, therefore, difficult to get at the average value of stable manure as compared with Peruvian guano.

The value of stable manure as compared with itself, is in proportion to the ammonia it contains, for the more ammonia it has, the more phosphoric acid and other valuable mineral substances does it contain. Some will question the truth of this statement, but it is nevertheless true as a general rule. As compared with Peruvian guano, the chemically fertilizing value of stable manure may also be estimated by the ammonia it contains nearly if not quite as much phosphoric acid in proportion to the ammonia as the best stable manure, and the *availability* of the elements of the guano, is in our opinion a full offset to the other mineral matter of the stable manure.

A ton of "farm yard dung," according to Boussingault, contains nitrogen nearly equal to 10 lbs. of ammonia; that from an "inn yard" 19.2 lbs. of ammonia. More recently from several analyses, Lawes & Gilbert found a "ton of rich box manure" to contain 5½ cwt. of dry substance and nitrogen, equal to 20 lbs. of ammonia, while another sample, composed principally of rotted straw, contained nitrogen, equal to only 5 lbs. of ammonia. A ton of liquid and solid excrements, free straw and other adventitious matter, from a horse fed with oats and hay, Boussingault found to contain nitrogen equal to 13½ lbs. of ammonia, and 78½ lbs. of mineral matter.

From these data, which are perfectly reliable, our correspondent can draw his own conclusions. A good Peruvian guano contains 16 per cent. of ammonia, or a ton would contain 320 lbs. If all the liquid excrements are saved from your "grain fed horses," and little litter is used, and the manure heap has not been reduced by fermentation; in other words, if your stable manure is fresh, it probably contains about as much ammonia as that analyzed

by Boussingault—13½ lbs. per ton. The figures, then, lead us to the conclusion that 23½ tons of *fresh stable manure, from grain fed horses*, is equal to one ton best Peruvian guano. By judicious fermentation, a considerable quantity of carbonic acid and water may be driven off, and the residue be left with a larger proportion of ammonia, in which case a fewer number of tons would be required to equal a ton of guano.

THE FARMER'S FUTURE.

AN English correspondent of the New York Tribune, expatiates on the prospective introduction of steam power as an aid in agricultural operations, as follows:—"The farmer's future will be found in the *application of steam to the cultivation of the soil*! We are rapidly coming to the conclusion here that the good old plow is a humbug. We begin to think that spade husbandry applied by steam is the right thing; indeed, there are some among us of the opinion that a machine may be invented which should, in effect, plough, sow, harrow, and roll altogether—a machine, in fact, which should make a seed-bed and sow the seed all at one operation. There has already been one steam-engine exhibited in this country which will walk anywhere, and do anything it is required to do. It has feet about the size of yours, Sir, and it puts them down upon the ground, one after the other, very much in the fashion of a dandy going up Broadway, only the feet of the machine are fixed on wheels, and revolve regularly, instead of moving up and down awkwardly, like his. This machine will go through a ploughed field very comfortably, and rather quicker than a good hunter will get over it; and as it will drag a dozen plows after it, I do not see for my part, why it should not be made to carry, as part and parcel of itself, a mechanism that will readily convert the untilled ground into a seed-bed. Well, then as to drainage. I saw a machine the other day that would dig, drain, and lay down sixteen and a half feet of piping per minute, the pipes being rather more regularly and satisfactorily laid than any skilled workman can lay them. The machine labored under the disadvantage of being cumbrous, and of being made to be worked by a stationary engine. But having got thus far, it seems to be only one step further to give us steam application to the soil so, as to enable twenty times the quantity of land to be put under cultivation by the same amount of labor, and at no greater cost than now. Then we may hope for a produce of cheap corn, the great desideratum in this land of sweat and toil, where it depends upon a shilling or two, more or less, in the price of food, not only whether a man can reap the advantages of his labor, but absolutely, too often, whether he can continue to exist.

DEEP TILLAGE.—Deep ploughing turns the drought itself to good account, and renders mulching and irrigation comparatively needless, or, if used, more efficacious. During a dry spell and in trenched ground, roots strike deeper in search of food and moisture, become more extensively ramified, and sooner find the rich loam and manure intermingled deeply with the soil. The leaching process, as it is called, is reversed, and takes place upwards more than at any other time, or, in some scientific phrase, capillary attraction is increased. As each particle of moisture is evaporated from the surface, it is succeeded by another, and the whole soil is filled with the ascending moisture and gasses, which are appropriated by the numerous rootlets as they have need.

The wet season is also a blessing to the deep cultivator. The more rain, the more heat, ammonia, carbonic acid and other organic elements are left in the soil as it descends. As each drop filters through, it is succeeded by another, or by air, both essential to vegetation; and to dissolve, act on or combine with the inorganic elements of the soil. As the water drains off air is sure to follow, and this is the proper mode of its circulation. Each is also generally at a higher temperature than the undrained land, and the warmth of the under soil is therefore relatively increased. The farmer often objects to this waste of water, and would retain it for a dry time. The trenched and porous soil holds water like a sponge, notwithstanding the drainage. It retains or can command enough for the wants of vegetation. But let us see the operation on the undrained land.

The farmer often speaks of his "cold, wet land." No variety of soil, in any location, is of itself colder than another. The very water, which treuching, draining, &c., allows to pass off, after imparting its virtues to the soil, if retained on or near the surface by hard, impervious subsoil, becomes itself, by its change, the source of the coldness complained of.—Instead of running off it evaporates, and by this practice abstracts a great quantity of heat from the soil and surrounding atmosphere. The evaporation of a pound of water requires about 1,000 degrees of heat, some authors stating it at less and others more, or it reduces one hundred pounds of air 45 degrees. This is reversing the experiment of Professor Johnson, in Espy's "Book of Storms," where he says, "a pound of vapor," condensed to water, "would heat 100 pounds of air about 55 degrees." The ground to a considerable depth, is warmer by many degrees, where the rain is drained off, instead of being allowed to accumulate and evaporate. Hence this enormous loss of an invaluable stimulus to vegetation.

The chilling and deadly process of evaporation is going on to excess from the time frost comes out of the ground in the spring, till freezing again occurs. At this period, the undrained land having the most water to freeze, becomes the warmest, say in December, when of no value in vegetation, but rather an injury. For once, forsooth, the undrained land is warmer than the drained! But for this excess of heat in the winter, this kind of land must pay dearly in early spring. How is all this! inquires the farmer. Simply because water, in congealing to either ice or snow, has its capacity for heat lessened about one-ninth, and this excess is given off to surrounding bodies: or, in other words, its latent heat is set free. On the other hand, ice or frost, as it is called in the ground, in melting, demands back this same heat, at the rate of from one-eighth to one-ninth of 1,000 degrees for every pound melted: and under the surface it does not obtain all this directly from the sun, but through the soil; therefore, the more water the colder and longer cold will be the land in spring. Now, let the agriculturist go to work and make this "cold, wet, heavy land" of his, the very best he has for any product, trees, vegetables, grains, or grasses.—*Dr. Kelley.*

GUANO FOR INSECTS.—A correspondent of the Horticulturist says:

"Sometime last summer, while budding some young peaches, I found that ants had taken possession of some ten feet in one row. They very earnestly resisted my attempts to inoculate the trees inflicting many unpleasant wounds on my hands and arms. In order to disperse the warlike little nation, I sprinkled near a pint of fine guano along the little ridges. This threw them into immediate consternation. I noticed little collections of winged ants huddled close together and seeming to be quiet, while those without wings ran about in great agitation. The following day not a single insect could be found where the day previous they appeared to be innumerable."

To which we add the following from an unknown source: "We had a very fine melon patch which was well nigh destroyed by the striped bug. The vines had commenced running, and in two or three days the bugs had stripped nearly every leaf. As a desperate remedy, we applied a handful of guano on the top of the hill as far as the vines had run, taking care that it did not fall on the leaf. In twenty-four hours not a bug was to be seen; the vines had assumed a healthy and vigorous growth, and are now loaded with fruit. The experiment was not on one vine only, but hundreds."—*Western Agriculturist, Oct. 19.*

RIDGING UP GROUND FOR WINTER.

THE following is from the agricultural writer of the N. Y. Daily Times, and well worthy of consideration by those whose spot of land is small, showing what can be done by deep tillage and a thorough cultivation of the soil:

We know a gardener, residing near a country town, who devotes his whole time and labor to a single acre of ground, and he raises for the market from this limited space fully enough to sustain a large family in comfortable circumstances, besides "laying by" a little every year. His invariable practice is to throw the whole plot into high, narrow ridges every autumn, and let it lie thus until spring. These ridges are from three to four feet high when first thrown up, and are as narrow as they can well be made. During winter the sides crumble down so as to partly fill up the intervening hollows; but the ridges are still elevated two feet or more at the close of winter.

We can readily perceive the effect of such an arrangement. Owing to the narrowness of the ridges the frost penetrates to the centre of each, while in the bottom of the furrows it goes down as deeply as it would have done from the undisturbed surface, and by this means the whole soil undergoes the freezing process to a depth of nearly three feet. It is thus mellowed and fitted for the reception of the roots of future crops. The air is admitted to that depth, and oxydizes or destroys the poisonous compounds that abound in all soils not subjected to its action.

The air also circulates freely through the ridges and deposits its rich stores of ammonia and other nutritious gases. The supplies of organic plant food from this source saves one-fourth to one-third of the manure that would otherwise be required.

The ground is much sooner freed from water in the spring, and more quickly warmed by the vernal sun, so that spring planting and sowing can be commenced several days earlier than on flat land, as is abundantly proved by the fact that the cultivator of the above garden is always first in the market with potatoes, tomatoes, peas, and other vegetables.

THE COFFEE TREE IN MAINE.—Mr. Drew, of the Rural Intelligencer, says that a friend of his in the town of Mt. Vernon has, for the last three years, raised the coffee plant in the open air, from seeds brought from Cuba. It grows about two feet high, and produces its berries in pods something like peas. The plants, he says, have matured, even this cold season, and the berries ripened without injury from the frosts. He has promised us some of the coffee of this year's growth to plant next year in our own garden, for he desires that we also should test the result of his experiment.

DOMESTIC WINE.

THE Cincinnati Chamber of Commerce, in a recent report upon the business of that city, remarks as follows:—

Another business which has grown up, almost entirely since 1850, is the making of wine, which promises to equal in amount that of the finest provinces of France. By comparing the statistics of the Horticultural Society with the fact, that numerous vineyards have been set out, in the last year or two, we may confidently state that there are not less than 2,000 acres of Catawba vines in cultivation, in the vicinity of Cincinnati, of which 1600 acres are in full bearing. By the average production of the last few years, this area of vines will yield 700,000 gallons, and in a very short time it must be greatly increased. Already dry and sparkling wines and brandy, commanding the highest prices, are made here, and the demand for them is greater than the supply.

Mr. V. Longworth, the famous wine-grower of Cincinnati, has just published an article in which he says:—

Ours is the region for grape culture and the manufacture of wine. The wine countries of Europe have no native grapes. Our hills and valleys are covered with vines, producing hundreds of varieties of grapes. Yet our Solomons have told us that our soil and climate is not calculated for the culture of the grape and the manufacture of wine. I can pardon that opinion at the north where they have the Fox and Frost grape only; but I now feel assured that I have on trial a few kinds of grape belonging to a cool region—that in the northern part of the State of New York, and in Vermont, which will be valuable for wine. I am not prepared to judge with certainty of the quality of many kinds I have now on hand. But I hope this fall to submit some wines to a select committee, made from new grapes, that shall compare with some of the best wines of Europe, of the same age. If our temperance men can be induced to respect the doctrine of the Bible, and not interfere with the culture of pure wine, not many years will elapse till we cannot only supply the United States with wine, but include all Europe.

RENDERING TEETH INSENSIBLE TO PAIN.—The Dublin Hospital Gazette states that diseased teeth have been rendered insensible to pain by a cement composed of Canada balsam and slacked lime, which is to be inserted in the hollow of the tooth, like a pill. It is stated that such pills afford immediate relief in all toothaches but chronic cases of inflammation.—This remedy for toothache is simple, safe, and can easily be tried by any person.

IMPROVE THE DRY WEATHER.

Those who have wells to dig should do it now so as to reach the lowest stage of water, and make sure of enough. Oftentimes the neglect of digging a foot or two further, when sinking a well, causes disappointment, and the necessity of performing much more labor hereafter.

Those who have lands that need draining, will find this a favorable time to do it, whether it be bog or upland. In underdraining uplands we have recently seen a rule given which we do not fully agree to. A writer on this subject advises to dig holes in those fields which may be thought to require draining, two or three feet deep, and if water stands in them the field should be underdrained. They most certainly should be. But it does not follow if the water should not stand in them now that they do not need underdraining. We know of fields that may be as dry as a bone now, that are in the spring of the year so saturated with water that they cannot be cultivated as they should be, and thus remain until it is too late to sow or plant. Such fields should be underdrained in order that they may be dry enough to cultivate in due season. Being drained then will not make them any drier now.

Those who have a chance to dig muck and peat, should improve it now by all means. If you cannot dig and haul into your yards now, dig it and lay it in such a place and manner that you can do it in the winter. This can be done. The muck or peat may be frozen as hard as wood, but it may be cut up inunks—we once knew a man to saw it up with his crosscut saw, and load the frozen blocks into his sled and haul them home with good profit.

Swamps, when you have bushes to cut, may now be cleared. By throwing the bushes into heaps or winrows, they will soon be dry enough to burn off. Bushes that are quite green, may be burnt by making a hot fire of dry stuff first, and putting on the green ones slowly and with a pole crowding them down into the fire. Many other permanent improvements may now be made by taking advantage of the dry weather.—*Maine Farmer.*

EUROPEAN PLOWS AND PLOUGHING.

So with regard to ploughing. It is not quite so bad here as in Spain, where a friend this season saw peasants ploughing with an implement composed of two clumsy sticks of wood, one of which (the horizontal) worked its way through the earth after the manner of a hog's snout, while the other, inserted in the former at a convenient angle, served as a handle, being guided by the ploughman's left hand, while he managed the team with his right. With this relic of the good old days, the peasant may have annoyed and irritated a rod of ground per day to the

depth of three inches; and, as care is taken not to afflict any field that cannot be irrigated, he may possibly, by the conjunction of good luck with laborious culture, obtain half a crop. It is safe to guess that this cultivator, living the year round on black bread moistened with weak vinegar or rancid oil, because unable to live better, cherishes a supreme contempt for all such quackery as book-farming.

The displays of Plows in the Palace of Industry, I may have already alluded to, but I am not yet done with it. It is therein perfectly demonstrable that the same expenditure of human effort and animal muscle which is now employed to disturb the earth indifferently to an average depth of five inches, would suffice, if properly directed, to pulverize the same area to the depth of ten or twelve inches, increasing our annual harvests by at least twenty-five per cent., and affording a safeguard against the evil influences of both wet and dry seasons. A few enlightened minds here are contemplating this result; the great majority of French farmers either never think on the subject, or else regard it much as one of our own inveterate blockheads—of that sort which not only knows nothing but glories in it—expends his substitute for wit on any meeting of a Farmers' club.—*Horace Greeley.*

VARIEITY OF FOOD NECESSARY.—It is in vegetable as in animal life; a mother crams her child exclusively with arrow root—it becomes fat, it is true; but alas! it is rickety, and gets its teeth very slowly, and with difficulty. Mamma is ignorant, or never thinks that her offspring cannot make bone—or what is the same thing, phosphate of lime, the principal bulk of bone—out of starch. It does its best, and were it not for a little milk and bread, perhaps now and then a little meal and soup, it would have no bones and teeth at all. Farmers keep poultry; and what is true of fowls is true of cabbage, a turnip, or an ear of wheat. If we mix with the food of fowls a sufficient quantity of egg shells or chalk, which they eat greedily, they will lay many more eggs than before. A well bred fowl is disposed to lay a vast number of eggs, but cannot do without the materials, for the shells, however nourishing in other respects her food may be. A fowl, with the best will in the world, not finding any lime in the soil nor mortar from the walls, nor calcareous matter in her food, is incapacitated from laying any eggs at all. Let farmers lay such facts as these, which are matters of common observation to heart, and transfer the analogy, as they may do, to the habits of ploughs, which are as truly alive, and answer as closely to every injudicious treatment, as their own horse.

From the Tolland Co. Gazette.
PEACH TREES.

I have observed that whenever the peach tree has been put upon new land—it has almost without exception and does yet thrive and bear for a series of years.

From this fact may we not conclude that there is some property in the soil of the newly cleared land, that were it called forth would aid us in the culture of this tree? Will some Chemist tell us what this is, how it can be obtained, or what may be substituted for it? The object certainly is worth their time, their investigation.

Again it appears that trees grown from rich land grow rapidly, and generally bear but once or twice before they die, while those on poor gravelly lands grow slowly, bear less luxuriantly, more hardy, and endure long.

From this fact we may learn that there is such a thing as driving this tree too much, and that our highly cultivated gardens are not the places for thriving Peach trees. In rich soils, the growth of the tree will be impeded, and the tree made hardy by clipping the ends off the branches often, especially those of the upright ones. If the branch is of any considerable size at the point severed, the wound should be covered with grafting wax.

With this culture the branches are all within reach from the ground, and the tree becomes hardy, (a good bearer) and often holds out for 15 or 20 years.

Col. Roe, of Farmington, has a thriving orchard managed in this way, while his neighbors consider it almost an impossibility to raise a single peach.—Again, I notice that several of the best peach orchards with which I am acquainted are situated on land declining toward the Northwest, and from this I am inclined to believe that the Northwest decline is the best, owing doubtless, to the fact that the tree in such situation would grow with less vigor; and be of firmer texture, than if on a Southern exposure and consequently be better fitted to stand our winters.

WATER IN BARN YARDS.—One of our agricultural exchanges remarks as follows upon the subject of water in barn yards:—

Such is the solvent power of water, that if admitted in large quantities into barn yards, it will dissolve and carry off into the earth, if the soil be porous, or into streams and ponds, a large share of fertilizing salts of manure. The manure of stalls should if possible be housed. It should be kept moist with the urine of animals, and sufficient litter should be used to absorb the whole of this, unless

it be preserved in a tank, to be used as liquid manure, the policy of which is perhaps doubtful in this country, where labor is high, though it may be well in Europe, where labor is plenty. The true proceeding for barn yard manure is, to keep it as far as possible moist, but not to suffer it to be drenched. If dry and hot, it gives its nutritious gasses to the winds; if drenched, it looses its most fertilizing salts; when neither scorched nor drenched, it is decomposed more gradually, and it retains in itself a larger portion of its enriching properties.

APPLES AS FOOD.—This fruit is exceedingly abundant this year, and, as a consequence, the price of it is reasonable. The working people in our city do not, as a general thing, regard apples as food, but merely as a luxury; this is especially the case with our foreign population. But apples are not estimated according to their real value as an article of food; they hold a low rank in the estimation of most persons in comparison with potatoes, so far as it relates to their nutritive qualities, whereas the best qualities of apples are perhaps superior. In Cornwall, England, the peasantry consider ripe mellow apples superior to potatoes as food, and nearly equal to wheaten bread. In many parts of Europe the laboring people eat sliced apples with their daily bread, and make a hearty healthy meal of them.—The finest apples in the world are raised in the United States, and the working people in our cities would do well to use more of them for food, especially during the fall and winter seasons, when they can be obtained cheap. We hope yet to be able to eat apples during the midst of summer (at fair and reasonable prices,) as sweet in flavor and rich in nutriment as when plucked from the tree. Much attention is now directed to their perfect preservation during summer's heat and winter's cold.

RAISING SUGAR BEETS.—Being obliged from necessity, rather than choice, to raise beets upon a clay soil, I obviate the difficulty by spreading on a heavy coat of barn yard manure in the fall, and turning under just before the ground freezes. Then during the winter I haul on about thirty loads of wood's muck. In the spring I plow deep, and thoroughly mix the soil, manure and muck with the harrow.—I then make the drills with the corn-maker, and sow the seed by hand. Thus treated, the yield from an acre is almost incredible, and stores the barn cellar with an invaluable food for all kinds of stock. No well regulated farm is without that amount of ground in beets; and when fitted in this way, the yield is more than double the number of bushels, when cultivated in the ordinary way.—*Rural New Yorker.*

LIST OF PREMIUMS

Awarded at the First Union Fair of the Counties of Granville, Warren and Franklin, held at Henderson, on the 10th, 11th, and 12th of October 1855.

Branch 1st.—Live Stock.

FIRST DIVISION.

First Class—Thorough Bred.

- 1st premium best Stallion over 4 years old,
Gen. M. T. Hawkins, Warren, \$1*
- 2nd best stallion over four years old, R. P.
Hughes, Granville, 2*
- 3rd best stallion over 4 years old, J. J. Bob-
bitt, Granville, Dip.
- 4th best stallion over 3 years old, Sol. Fuller,
Franklin, dsp.
- Best brood mare over 4 years old, R. P.
Hughes, Granville, 2*
- 2nd best brood mare over 4 " " S. L.
Parish, Granville, dip.
- 3rd best brood mare over 4 " " Arch.
Davis, Granville, dip.
- Best colt over 2 and under 3 years old, R. P.
Hughes, Granville, 2*
- 2nd best over 2 and under 3 " " Gen.
M. T. Hawkins, Warren, dip.

First Class, not Thorough Bred

- Best colt over 2 and under 3 years old, S. L.
Parish, Granville, 2*
- 2nd best colt over 2 and under 3 years old,
Arch'd. Davis, Granville, dip.
- 3rd best colt over 2 and under 3 years old,
James Crews, Granville, dip.
- Best (thorough bred colt) 1 year old, Gen. M.
T. Hawkins, Warren, 2*
- 2nd best colt under 1 year old, Mrs. S. T. La-
ton, Granville, dip.
- 3rd best colt under 1 year old, S. L. Parish,
Granville, dip.

Second Class—Saddle, Harness and Draught
Horses

- Best saddle horse, S. S. Cooper, Granville, 3
- 2nd best saddle horse, L. J. Davis, Granville, dip.
- 3rd " " " W. H. Eluck, Franklin, dip.
- Fastest pacing horse, C. H. K. Taylor, Gran-
ville, 1
- Best pair carriage horses, Jas. Turner, Gran-
ville, 3*
- 2nd best pair " " T. J. Blacknall,
Granville, 1*
- 3rd best pair carriage horses, W. B. Hughes,
Granville, dip.
- 4th best pair carriage horses, Dr. H. J. Rob-

- erts, Granville, dip
- Best single harness horse, Thomas C. Hughes,
Granville, 3
- 2nd best single harness horse, W. Bareford,
Granville, dip.
- 3rd best single harness horse, S. S. Cooper,
Granville, dip.
- 4th fastest trotting horse, W. Bareford, Gran-
ville, 1
- *Best lot farm horses, S. L. Parish, Granville, 3*
- Heavy draught horses, John W. Weaver,
Granville, 2*
- Best saddle poney, H. J. B. Clark, Jr., War-
ren, 1*
- 2nd best saddle poney, T. J. Blacknall, Gran-
ville, dip.
- 3rd best saddle poney, J. T. Young, Gran-
ville, dip.

JACKS AND JENNETS.

- Best Jack, Gen. M. T. Hawkins, Warren, 4*
- 2nd best Jack, J. S. Jones, " dip.
- 3rd " " Reuben Hart, Granville, dip.
- Best two young Jacks, Wm. D. Foster, Frank-
lin, 2*
- Best Jennets and colt, H. J. B. Clark, Sr.,
Warren, 1*
- One male colt, G. N. Hicks, Granville, 1

CATTLE.

- Best 2 year old bull, James R. Smithwick,
Warren, 1*
- Best mitch cow, Mrs. Sally Reid, Granville, 2*
- Best yoke work oxen, S. S. Royster, Gran-
ville, 2*
- 2nd best yoke work oxen, J. Crews, Granville, dip.
- 3rd " " " H. J. Robards, Gran-
ville, dip.
- Best single work oxen, Reuben Williams,
Warren, 2*
- Best heifer calf 9 months old, Jas. R. Smith-
wick, Warren, 1*

SHEEP.

- Best Merino buck, Col. R. P. Taylor, Gran-
ville, 2*
- Four French Ewes, Col. R. P. Taylor, Gran-
ville, 2*
- Four Spanish Ewes, Col. R. P. Taylor, Gran-
ville, dip.
- Six Merino lambs, Col. R. P. Taylor, Gran-
ville, 1*

SWINE.

- Two Chester pigs 3 months old, E. T. Gran-
dy, Granville, 1

Three Nobone pigs, W. B. Reid, Granville,
Largest killing hog, Mrs. S. T. Eaton, Granville,

POULTRY.

1 pair Sumatra Pheasant Game Chickens, T. T. Grandy, Granville,
1 coop Shanghai chickens, T. J. Blacknall, Granville,
1 coop Shanghai chickens, H. J. Robards, Granville, dip.
1 coop Shanghai chickens, J. H. Rowland, Granville, dip.
Largest variety, W. H. Robards, Jr., Granville,

Branch 2d—Agriculture.

FIRST CLASS.

Best sample of wheat, S. S. Royster, Granville, 1*
2nd best sample wheat, S. R. Hunt, Granville, dip.
3rd " " " Mrs. S. T. Eaton, " dip.
Best sample buck wheat, L. A. Blankenship, Granville, 1
Best sample corn, Mrs. S. T. Eaton, Granville, 1*
2nd best sample of corn, Col. P. E. A. Jones, Granville, dip.
3rd best sample of corn, Thomas Reavis, Granville, dip.
Best sample leaf tobacco, John M. Barnes, Granville, 1*
2nd best sample leaf tobacco, John Clarke, Granville, dip.
3rd best sample leaf tobacco, James Dieker-son, Granville, dip.
Best sample winter oats, W. H. Robards, Jr., Granville, 1*
2nd best sample winter oats in straw, Mrs. E. H. Foster, Franklin, *
Best sample cornfield and white peas, Mrs. S. G. Wilson, Granville, 1
2nd best sample cornfield peas, W. C. Weaver, Granville, dip.
Best sample Japan pea, J. J. Wyche, Granville, dip.
Best white beans, W. G. Weaver, Granville, 1*
2nd best white beans, Mrs. S. G. Wilson, Granville, dip.
3rd best sample white beans, W. L. Brame, Granville, dip.
Best sample Cotton native, J. J. Kelly, Granville, 1*
2nd best sample " A. H. Evans, dip.
Franklin,

* Best Mastodon Cotton, Dr. L. G. Ward, Greene, dip.
2* Best sample pea-vine hay, L. H. Kittle, Granville, 1*
Best sample sweet potatoes, John W. Weaver, Granville, 1*
1 2nd best sample sweet potatoes, Col. P. E. A. Jones, Granville, dip.
1 3rd best sample sweet potatoes, Dr. James Russell, Granville, dip.
1 lot pumpkins, Col. P. E. A. Jones, Granville, *
Best sample cabbage, Mrs. S. S. Royster, Granville, 1
Best sample Turnip, J. J. Wyche, Granville, 1
1 Best sample Irish potatoes, Wainwright & Vanhook, Granville, 1*
2nd best sample Irish potatoes, Mrs. V. H. Cooke, Franklin, dip.
3rd best sample Irish potatoes, Jas. Gooch, Granville, dip.
Best sample beets, Col. R. P. Taylor, Granville, 1
2nd best sample beets, A. D. Williams, Franklin, dip.
1 3d best sample beets, Mrs. A. H. Alley, Granville, dip.
Best sample onions, Mrs. Isham Cheatham, Granville, 1
Largest variety of vegetables consisting of rare specimens, viz: Turnip, cabbage, N. Zealand Spinach, Chinese winter radish, Japan peas, Turtle-soup beans, Chieory, Chufus, Swiss-eord beet, Sweet spanish pepper, Hamburg parsly, Skirret, Spanish sea-kale and Sorgho-lucre, J. J. Wyche, Henderson, \$2*

Second Class.

Best bacon hams, Isaac Cheatham, Granville, 1
2nd best " J. M. Barnes, " dip.
Best sample fresh butter, Mrs. R. P. Taylor, Granville, 1
2nd best sample fresh butter, Mrs. T. T. Estis, Granville, dip.
Best sample 6 months old butter, Mrs. Joe Parham, Granville, 1
Best sample of flour, S. R. Hunt, Granville, 1*
2nd best sample of flour, J. H. Gooch, " dip.
Best sample wheat starch, Mrs. J. W. Hayes, Warren, 1
Best sample potato starch, Mrs. V. H. Cooke, Franklin, 1
1* Best sample loaf bread, J. Simmons, Warren, 50c
2nd best sample loaf bread, S. R. Hunt, Granville, dip.

Best sample large fancy cakes, J. Simmons, Warren,	50c
Best sample small fancy cakes, J. Simmons, Warren,	50c
Largest variety jellies, Mrs. Sarah Reid, Granville,	2
1 jar of citron, Mrs. V. H. Cooke, Franklin,	50c
" " " E. H. Foster, "	dip.
" of pickled pepper, Mrs. V. H. Cooke, Franklin,	50c
1 jar brandy peaches, Mrs. S. S. Royster, Granville,	50c
1 jar brandy peaches, Mrs. S. Reid, Granville,	dip.
Best sample dried apples and pears, Mrs. S. Royster, Granville,	2
2nd best sample dried apples, W. G. Weaver, Granville,	dip.

Third Class—Fruit.

Best sample Apples, Mrs. S. S. Royster, Granville,	\$1
2nd best sample of apples, Mrs. W. A. Eaton, Granville,	dip.
3rd best sample of apples, Isaac Cheatham, Granville,	dip.
Best sample of peaches, Mrs. W. A. Eaton, Granville,	1
2nd best sample of peaches, W. G. Weaver, Granville,	dip.
Best sample of pomegranates, Mrs. W. A. Eaton, Granville,	1
Best sample of scuppernong grapes, Mrs. V. H. Cooke, Franklin,	1
2nd best sample of scuppernong grapes, Mrs. W. A. Eaton, Granville,	dip.
Best sample of Franklin grapes, Mrs. V. H. Cooke, Franklin,	dip.
Largest variety of fruit, Mrs. W. A. Eaton, Granville,	1*
Best sample of raspberry vine, Master W. D. Royster, Granville,	1

Branch 3d—Mechanics.

FIRST CLASS.

Best 2 horse plow, Wainwright & Vankook, Granville,	1
Best one horse plow, Wainwright & Vanhook, Granville,	1*
Best iron beam plow, "	1*
2nd best two horse plow, J. H. Gooch, Granville,	1*
2nd best one horse plow, J. H. Gooch, Granville,	1*
Best subsoil plow, " " "	1*
Best cultivator plow, " " "	1*

Second Class.

Best two horse top buggy, W. H. Bobbitt, Warren,	2*
Best one horse top buggy, J. J. Minatree, Franklin,	1*
Best one horse open buggy, Eaton Haithcock, Granville,	2

Third Class.

Best sweep horse power, J. H. Gooch, Granville,	2*
Best wheat drill, C. Burnet, Granville,	2*
Best wheat fan " "	1*
Four straw cutters, " "	1*
Best wheat thrasher and power, J. M. Barnes, Granville,	2*
Best wheat thrasher, J. M. Gooch, Granville,	2*

Fourth Class.

Best set wagon harness, two horses, Hugh McCadden, Granville,	2
---	---

Fifth Class.

Best bedstead, Mrs. M. N. Wagstaff, Granville,	1
Best spring mattress, " "	2
Best shuck and cotton mattress, Mrs. M. N. Wagstaff, Granville,	1
Best mohair sofa, Mrs. M. N. Wagstaff, Granville,	2
Damask and plain lounge, Mrs. M. N. Wagstaff, Granville,	dip.
Best wardrobe, Jas. L. McCraw,	1
2nd best wardrobe, Mrs. M. N. Wagstaff, Granville,	dip.

Sixth Class.

Four straw hats, Mrs. S. Breadlove, Franklin,	1
1 child's hair hat, Miss Mary Gupton, " "	1
1 ladies hair bonnet, Mrs. H. Gupton, " "	1
1 " " box, " "	1
1 willow hat, Miss Lucy A. E. Hunt, Granville,	1

Seventh Class.

Best lot of leather, H. McCadden, Granville,	1*
Best dressed calf skin, " "	1
2nd best lot of leather, W. H. Hester, Granville,	dip.
Best lot of manufactured tobacco, R. A. Jenkins, Granville,	1*
2nd best lot of manufactured tobacco, P. V. Duke & Co., Granville,	dip.
Best lot of cigars, R. A. Jenkins, Granville,	1*
Best lot of tallow candles, Mrs. W. L. Brame, Granville,	1
Best lot of soap, Mrs. S. T. Eaton, Granville,	1

BRANCH 4TH—LADIES DEPARTMENT.

FIRST CLASS.

8 yards of yarn cloth, Mrs. J. C. Lemay, Granville,	52	1 piece of flax linen towels, Mrs. J. Crews, Granville,	1
3 yards yarn cloth, Mrs. J. Crews, Granville,	1	2 linen table cloths, Mrs. J. Crews, Granville,	2
3 " " " " J. M. Barnes, " dip.		Cotton Fluffs, Mrs. S. G. Wilson, " 1	1
3 " " " " I. M. Vaughan, " dip.		Cotton and woolen vesting and carpet bag, Mrs. H. H. Howland, Granville,	2
Three pieces of lining, Mrs. C. R. Lewis, Granville,	2	1 set of bed curtains, Miss A. Kittrell, Granville,	1
Three pieces " Mrs. J. J. Kelley, Granville,	1	1 set of bed valance, Miss N. Morris, Franklin,	1
One piece of " Mrs. W. H. Yearner, Granville, dip.		1 set of bed fringe, Mrs. S. G. Wilson, Granville,	1
One piece of " Mrs. H. Tramah, Granville, dip.		2 knitt counterpane, Mrs. E. Southerland, Warren,	2
30 yards cowhair cloth, Miss M. Johnson, Granville,	2	1 stuffed counterpane, Mrs. E. R. O'Brien, Franklin,	2
1 piece of flannel, Mrs. J. C. Lemay, Granville,	1	1 pair of yarn socks, Miss M. J. Vaughan, Warren,	50c
Best yard blanket, Miss Betsey Daniel, " 2		1 pair of yarn socks, Mrs. T. W. Pleasants, Granville,	50c
2nd " " " F. Satterwhite, " 1		1 pair of cotton socks, Mrs. L. Haidcock, Granville,	50c
3rd " " " S. Gill, Franklin, dip.		1 pair of cotton hose, Miss L. Ingers, Franklin,	50c
4th " " " L. J. Pittard, Granville, dip.		1 pair of cotton hose, open work, Mrs. W. Debnam, Franklin,	50c
Best white counterpane, Miss E. Gill, Franklin,	2	1 pair of cotton hose, Mrs. T. Satterwhite, Granville, dip.	
2nd " " " Mrs. Parham, Granville,	1		
3rd best white counterpane, Miss L. H. Vaughan, Granville,	1	Second Class—Ornamental Needlework.	
4th best white counterpane, Mrs. W. P. Harton, Granville, dip.		Best table cover, Miss C. J. Thurman, Granville,	3
5th best white counterpane, Mrs. J. J. Kelly, Granville, dip.		2nd best table cloth, Miss Cooper, Granville,	1
Best five counterpanes, Mrs. I. Chickham, Warren,	2	3rd " " " Mrs. S. A. Barnett, " 1st dip.	
Best quilt, prettiest pattern, Mrs. J. G. Yancy, Warren,	2	1 white stuffed cover, Miss R. Rigan, Granville,	2
2nd best quilt " Miss R. Wood, Granville,	1	1 ottoman cover, Miss Roberts, " 2	
Best quilt and prettiest quilting, Miss F. Grasset, Franklin,	2	1 " " " M. E. Royster, " 1	
2nd best quilt, 1,755 pieces, Mrs. Wm. Debnam, Franklin,	1	1 " " " M. A. Marrow, " dip.	
3rd best quilt, Misses S. & L. Johnson, Granville, dip.		1 " " " I. O. Gregory, " dip.	
4th best quilt, Mrs. C. G. Bobbitt, Granville, dip.		1 " " " A. Hamner, " 2d dip.	
Best woven carpet, Mrs. Dr. Field, Warren, and diploma,	2	1 worked collar, Mrs. E. A. Jones, Franklin,	1
Best cow hair and cotton carpet, Mrs. W. H. Hughes, Granville,	1	2 worked collars, Graves & Wilson, Warren,	3
2nd best cotton carpeting, Mrs. C. Daniel, Granville,	1	1 crocheted collar, Miss M. Cook, Raleigh,	dip.
Best hearth rug, Mrs. Dr. Field, Warren,	2	1 worked handkerchief, Miss L. E. Foster, Franklin,	1
1 piece of flax cloth, Mrs. J. C. Lemay, Granville,	2	3 pair worked sleeves, Mrs. P. E. A. Jones, Granville,	2
1 piece of flax table cloth, Miss M. Guyton, Franklin,	1	1 pair of worked sleeves, Mrs. W. H. Hughes, Granville,	1
		1 worked skirt, Mrs. S. T. Eaton, Granville,	1
		1 " " " Miss C. J. Thurman, " 1st dip.	
		1 worked linen band, Miss Fletcher, " 1	
		1 washing apron, Miss M. A. Reid, " dip.	
		1 worked child's dress, Miss S. Tate, Franklin,	2 dip
		1 worked child's dress, Mrs. A. D. Williams, Franklin,	2
		1 pair of worked pantslets, Miss T. C. Withams, 3 yrs, Franklin,	1

- 1 emb. child's dress, Mrs. B. A. Hamilton, Granville, dip.
- 1 emb. child's dress, Mrs. T. G. Kittrell, Granville, dip.
- 1 shirt vest, Mrs. W. P. Hansen, Granville, 1
- 1 " " Miss Bertie White, " 1
- 2 shirts, Mrs. W. H. Weaver, " 2
- 1 fancy paper basket, Miss P. E. Yancy, Granville, 1
- 2 boxes wax flowers, Miss M. A. Reid, " 1
- 2 fire screens, Mrs. Dr. Lewis, " 1
- 2 oil paintings, 1 Oryzon, 1 Pastel, Graves & Wilcox, Warren, 5
- 2 oil paintings, Miss M. A. Farish, Oxford, 3
- 2 Grecian paintings, Miss H. E. Thompson, Oxford, 2nd dip.

Dissemporary Premiums.

- 1 fancy work table, Mrs. A. C. Harris, Granville, 1
- 1 wire safe, W. J. Ellington, Henderson, 2^d
- 2 " " C. Burner, " 1
- 1 lot of the ware, Jas. Ferguson, Henderson, 2
- One Essay on the best mode of the cultivation of Corn, Dr. S. G. Ward, Warren, 5

The committee on plows not being able to decide between the two exhibitors awarded the premiums to each.

The stars indicate the Arator or Cultivator as an additional premium. Though persons receiving more than two premiums so marked, are required to take but one copy of each, and will be paid the remainder in money. They will be forwarded from the office of publication, as soon as we can ascertain the address of persons entitled to them, and the number of copies required. Premiums paid on application or order.

THOS. T. BLACKWALL, Treasurer, Henderson.

A. C. HARRIS, Chairman, pro tem.

Narrative Committee.

KILLING HOGS IN QUICK TIME.—The Romans were notoriously fond of pork. So they studied every artistic method to improve its flavor or add to its delicacy. A living pig was taken, made to swallow vinegar, a great variety of herbs, all boiled together, and then immediately whipped to death! and roasted forthwith. The Normans had still more barbarous method of killing piggy, in order to render his flesh more palatable. Their mode of killing was particularly savage. They brast a red hot spit through the body of the pig, and sufficed it to die without bleeding. Even if by this method the flesh was made tender, the rotation of the blood changed its color, and disposed it to more speedy putrefaction.

NANKIN OR SHANGHAI SHEEP—FAST BREEDING.

Theodore Smith, in the Progressive Farmer, says—

"On the 13th of September last, or a little more than ten months ago, I bought four sheep of the Nankin breed—all ewes—from a ship that arrived from Canton. They had been on ship-board about 100 days. I sent them to my farm, Norwalk Island, Connecticut, for the purpose of trying sheep raising in a small way. It may be proper to state that I had no other sheep before these—bought none afterward—nobody gave me any—they were all I had. In the course of three weeks I lost five—(remember I had originally but four)—and had eleven left, and now I count as many as twenty six.

"Now this story may cover a little of Menckenson, and unless I complain, will hardly be credited for the truth. The increase of course is the question before us. The ewes each had three lambs, making them sixteen, old and young; but one of the ewes was lost in transporting her to the island, and she died in the act of parturition, with all her lambs, and one other lamb died also, leaving eight lambs and three old ewes—these I wintered, and now, both old and young are coming in again, four having done so. From this second crop, so far, one has two lambs, another has four; still another five; and one has five lambs; and when they all shall have had lambs, which will be in two or three weeks, I shall have more or as thirty-five or forty, all from three sheep in ten or eleven months; and although it may seem incredible, in the short space of two years, at that rate, I must have (supposing I period with none,) at least five hundred. Can Pennsylvania beat this? I should state another remarkable fact in relation to them, that has occurred since I saw you: &c. the ewes have within two weeks, gone to the back again, and will have lammes again, say by next Christmas, or three times in fifteen months."

SMITH HARRIS.—We desire to impress on the common-sense reasoning of every man, the paramount importance of having no more land in culture than can be well cultivated. By no means attempt to manage more than you can manage well. Be a FARMER, not a ware earth scraper, lazily scratching up sufficient earth to destroy the life of the soil, and throw seed away, or you will always have to scratch hard for a living. But make your farm a source of pride, and it will surely become a source of profit. Make the object to be not to have money, but TO ENJOY

BROOM CORN.

WE make the following extract of a letter from a correspondent of this office, dated at West Glenville, Schenectady County, New York, to show the mode of culture and value of this agricultural product:—

"Broom corn for many years has been cultivated to a considerable extent with us, especially on the 'flat lands' lying along the Mohawk River, and is considered a profitable crop. The principal objections to growing it on 'up-lands' are, that it makes no fodder or manure, except the stalks, which are of but little importance, either as a fertilizer or for feed. They are generally consumed in the field after the brush is taken off. The usual method of cultivation is to plough the land in the spring, harrow it until the soil is pulverized and mellow, and then roll it down smooth with a revolving plank or log roller. The seed is sown with a drill, as early in the spring as the condition of the ground will admit, in rows, at the distance of three feet apart, and from six to eight inches apart in the drills. As soon as the corn is above ground, a narrow piece of ground on each side of the row is scraped with the hoe, to prevent the weeds from hindering its growth, the remaining space being left for the cultivator, which is frequently run to keep down the weeds. The cultivation is finally finished by running the plough twice to each row. The brush is cut while green, and as often as convenient. As it grows from eight to twelve feet high, the tops are first bent or topped to one side and cut, with seven or eight inches of the stalk left on. Each stalk composes a brush."—*Agricultural Division of the Patent Office.*

NEW BUILDING MATERIAL.—The Cleveland Herald speaks of a new kind of bricks which have been introduced there for building purposes. They have the appearance of granite, and are made of sand and lime, the blocks subjected to a great pressure while in nearly a dry state. In size they are ten by four and five inches and hollowed, the indented part being seven by one and a half inches. After the bricks are formed into shape and pressed, they are subjected to the action of the atmosphere, and soon become as hard as rock, and insensible to the frost or rain. These bricks cost twenty dollars per thousand; but the inventors say that they are cheaper than clay bricks that cost but three dollars, because they furnish so smooth an interior surface that no plastering is necessary, and being hollowed, the walls do not require to be furred.

TICKS ON SHEEP.—When sheep are fed salt, (which they should have often,) mix common sulphur with it thoroughly, so as to give each sheep a common-sized teaspoonful, and by the time you have given them three such portions, you will find the ticks have taken a furlough, and left for parts unknown. This is the cheapest remedy I have ever found, and I am satisfied that if sheep are fed with sulphur once a month, in this manner, through the year, they will never be troubled with ticks, and it will conduce to keep sheep in a healthy condition. I cannot give the *modus operandi* of the operation in full, but think the sulphur is acted upon chemically in the stomach of the animal, and, diffusing itself through the system, renders the skin offensive to the ticks, and they quit the premises. I keep a few sheep, and I never sell any ticks in my wool—neither do I see the poor creatures rub themselves against trees, fences, or stumps, and thus tear the wool off before shearing.

J. M. WESTCOTT, in *Rural New Yorker*.
Barrington, N. Y.

A VALUABLE PAINT.

MESSRS. EDITORS:—For the information of Mr. Philip, of Greene Co., and all others who are wishing to obtain a cheap and valuable paint for buildings, I would say, take common clay, (the same that our common bricks are made of,) dry, pulverize and run it through a sieve, and mix with linseed oil. You then have a first-rate fire-proof paint, of a delicate drab color. Put it on as thick as practicable.

If any one has doubts with regard to the above, just try it on a small scale—paint a shingle for instance and let it dry. Recollect that it must be mixed thicker than common paints.

The clay, when first dug, will be wet or damp, but will soon dry, spread in the air under a shelter, or, if wanted immediately, it may be dried in a kettle over a fire. When dry it will be in lumps, &c., and can be pulverized, by placing an iron kettle a few inches in the ground, containing the clay, and pounding it with the end of a billet of hard wood, 3 inches in diameter, 3 feet long, the lower end to be a little rounded, &c. Their sift it. Any clay will make paint, but the colors may differ, which can easily be ascertained by trying them on a small scale as above indicated. By burning the clay slightly you will get a light red, and the greater the heat you subject it to the brighter or deeper the red. A. B.—*Country Gent.*

KEEPING APPLES.—S. S. Boyd, of Jacksonburgh, Indiana, states that he has found apples to decay in keeping, more from being kept too close and warm, than from all other causes put together.—He has succeeded remarkably with a cellar where the air circulates freely, and is so cool that potatoes cannot be kept there. Close, or confined air we have long since found to be detrimental, and we have therefore adopted the plan of suspending the apple shelves in the middle of the cellar, so that one can pass round on every side, which is the most convenient; and so as to admit a free circulation of air, which cannot take place when the shelves are in contact with the damp walls. Iron rods are best for supporting them, and if sufficient space is allowed, rats and mice cannot reach them.

NEW SEEDLING POTATOES.—Mr. D. A. Bulkely, of Williamstown, Mass., has been amusing himself for several years, in raising new varieties of the potato from seed. He has now about six hundred distinct varieties of seedlings, which he designs planting the present spring, for the sake of testing their comparative qualities. One variety produced by him, called the *Stone Hill* potato, he states, yielded an average of 266 bushels to the acre, last year, and of very superior quality. They become fit to use as early as the 15th of July, and keep good the whole year.

NEW MODE OF RAISING FRUIT TREES.—A Bohemian agriculturist has successfully introduced a new mode of planting. Instead of using the process of grafting, he takes an offshoot of any fruit tree—an apple tree for instance—and plants it in a potato, both being carefully placed in the soil, so that five or six inches of the shoot shall be above the ground. This latter takes root, grows with rapidity, and produces the finest of fruit.—*Maine Farmer.*

ANIMALS kept quiet, dry and warm, will require much less food and will do more work, keep in better condition, and yield much more profit, than those exposed to the inclemency of the weather. Do, kind reader, remember this fact. It is unkind to starve your stock; and, what is a far more potent argument, it is *unprofitable*.

NEW CEMENT.—A new roofing material has just come into use, which is highly spoken of. It is a composition or cement, made in a manner known only to the inventor, but which has great solidity, is thoroughly fire-proof and indestructible, subject to no leak, is a non-conductor of heat and cold, and is very cheap.

USE OF SALT IN COOKING VEGETABLES.—If one portion of vegetables be boiled in pure distilled or rain water, and another in water to which a little salt has been added, a decided difference is perceptible in the tenderness of the two. Vegetables boiled in pure water are vastly inferior in flavor. This inferiority may go so far, in the case of onions, that they are almost entirely destitute of either taste or odor, though when cooked in salted water, in addition to the pleasant salt taste, a peculiar sweetness and a strong aroma. They also contain more soluble matter than when cooked in pure water. Water which contains 1.420th of its weight of salt is far better for cooking vegetables than pure water, because the salt hinders the solution and evaporation of the soluble and flavoring principles of the vegetables.—*Scientific American.*

FACTS ABOUT MILK.—Cream cannot rise through a great depth of milk. If, therefore, milk is desired to retain its cream for a time, it should be put into a deep, narrow dish; and if it be desired to free it most completely of cream, it should be poured into a broad, flat dish, not much exceeding one inch in depth. The evolution of cream is facilitated by a rise, and retarded by a depression of temperature. At the usual temperature of the dairy, 50 degrees Fahrenheit, all the cream will probably rise in thirty-six hours; but at 70 degrees it will perhaps rise in half that time; and when the milk is kept near the freezing point, the cream will rise very slowly, because it becomes solidified. In wet and cold weather the milk is less rich than in dry and warm, and on this account more cheese is obtained in cold than in warm, though not in laundry weather. The season has its effects.—The milk, in spring, is supposed to be the best drinking, hence it would be best for calves; in summer it is best suited for cheese; and in autumn the butter keeping is better than that of summer—the cow less frequently milked, gives richer milk, and consequently more butter. The morning's milk is richer than the evening's. The last drawn milk of each milking, at all times and seasons, is richer than the first drawn, which is the poorest.

CLAY or marl on peaty or sandy soil not only benefits it by rendering it more compact, but also by introducing valuable mineral elements.

HONORS come by diligence; riches spring from economy.

INSECTS DESTRUCTIVE TO GRAIN CROPS

In a former article we alluded to the prevalence of insects destructive to grain crops in particular seasons, especially of the aphides. At the present time the destructive effects of an insect upon our wheat crops has become apparent to such an extent as in some instances to have affected the yield upwards of 25 per cent. This is the insect alluded to by the Rev. Mr. Sidney at Mr. Mechi's late gathering; and interesting as his description of it was, we think it would have read better had he not taken to himself the credit that he was the only person there who had noticed its prevalence upon the wheat crop; for long before Mr. Sidney had investigated the subject, it had been treated upon and explained in our columns. And we believe the destructive character of the small ichneumon, as also described by him, which attacks its larva, was first made known to the public through our pages: at any rate we can produce information upon the subject of upwards of twenty-five years' standing, and therefore conclude that most persons present at that meeting must to some extent have become acquainted with its habits.

The *coelomya tritici* is a small pale orange-colored insect, with prominent black eyes, of the form and about half the size of a common gnat, that is rarely visible except at the time of the wheat coming into ear, when it may be seen on fine still summer evenings, from four o'clock until sunset, quietly at rest upon the protruding wheat-ears, as well as upon those recently developed, with what to an ordinary observer would appear to be its tail; but, in reality, its ovipositor, inserted between the glumes of the wheat chaff, where it deposits its eggs; and by the same process causes the chaff to adhere by some glutinous substance, so as to prevent the anthers escaping, and thereby retaining the pollen and preventing the germination of the particular germs attached by them. The object of the insect appearing to be to secure the pollen from further development for the sustenance of its progeny, which shortly appear in the form of small orange colored maggots, and which, upon being exposed, move with a particular kind of jerk, and remain in their larva state until the approach of harvest, when they become transformed to the pupa or chrysalis state, and fall to the earth, where it is presumed they remain until the following summer, when they assume the perfect or fly state, to again resume their attack and reproduce their progeny in like manner as before.

The small ichneumon fly, also alluded to by Mr.

Sidney, is a small black insect of a long taper form, with a pointed tail-like ovipositor, with which it strikes its victims, and deposits its eggs beneath their skins, usually causing their destruction; but from the secluded position the larvæ of the wheat fly obtain betwixt the glumes of the wheat chaff, we apprehend but few of them are approachable by this insect, and from extensive examinations, made year by year, believe that most of them undergo their transformation, and enter safely into the pupa state, and if the thrashing floor of the wheat be examined, myriads of them probably will be found mixed up with the wheat chaff.

In this brief description of the insect, and its habits, it will be seen that no human foresight will enable the farmer to arrest its progress. It is probable that, at the time of the wheat coming into ear, the fly comes also into existence in its perfect state, and proceeds at once to perpetuate its species in the manner described. Sometimes, from the wheat coming early into ear, the forward pieces escape altogether, and the latter pieces only suffer. In the present year the early pieces have suffered greater, and this may be attributable to the season being several days later upon the average, the early pieces, in point of time, being exactly where the late pieces usually happen, and, from the weather having been cold and with little sunshine at the time of the wheat earing, that process was extended through a considerably longer period than usual, whereby the attack of the fly was prolonged several days, and thence the destructive effects so visible in the majority of pieces this season.

Some kinds of wheat are more liable to become attacked than others: indeed, it is an established fact, that in proportion as the variety is more or less delicate and tender, so does the attack more or less prevail. Tabor, as well as all the early descriptions of white wheat, is more susceptible of attack than the later sorts of either white or red wheat: but the early sorts of red wheat are also proportionately more liable to become attacked than the later and coarser descriptions, and this rule will be found to obtain to a great extent in the present season; still, upon examination a smaller number of larvæ will now be found than usual, although it is perfectly clear that they existed about a fortnight ago in much larger numbers than common.

In stating an opinion that they will be less prevalent in 1854 than in the present year, we do so without hesitation; and we base that opinion upon the circumstance of so few having arrived at

their proper state in the present year. This we attribute to the continuous showery weather that we have of late experienced. It is not in this instance only that we prophesy future results; for with many other insects we are enabled to foretell like results, as the number of them in future seasons depends upon the state of weather at the time they usually appear in any preceding one.—Thus with the click beetle—the parent of the wire-worm: if the latter portion of the month of May and beginning of June be warm and dry at the time it deposits its eggs, most of them become hatched, and a numerous progeny of the grub in the succeeding year will be the consequence. So also with the wheat midge: if the latter portion of July and beginning of August continue dry and warm, myriads of them pass into the pupa state, to reappear in the following season.

At present no remedy has been devised for their destruction; nor do we think it could be accomplished at any time after they have emerged from the ground. It is possible that their numbers may be diminished by carefully separating them from the chaff at the time of dressing the wheat, and destroying them; but if once they become transferred to the farm-yard, and are incorporated with the manure, it is probable that they will be again reproduced upon the spot where the manure is applied in the following year, as many descriptions of insects are found to be able to withstand the operations of husbandry with little injury to themselves; and the tenacity of life in all classes is such, that the merely carrying them with soil tends rather to their preservation than otherwise.—*Farmer's Magazine.*

FEEDING OUT ROOTS.

Mr. Lawrence, of Cirencester, has made some experiments in feeding turnips to cattle in Winter. We will condense his observations for the benefit of our readers.

It seems, from his observations, that to give a bullock a full feed of roots alone, is not so good as to give a less quantity with cut hay, or straw (chaff, as they call it in England.)

When I commenced feeding bullocks some years ago, says he, I was in the habit of noting down the allowances of the different kinds of food recommended in the agricultural papers, and by men of reputed experience in such matters. The quantity of roots recommended were from 1 to 1½ wt. per day, for large bullocks, (this would be about a bushel and a half of ruta bagas per day, Ed.) and that without admixture.

3

He then goes on to say:—"Now what is the object we propose to accomplish? It may be assumed for our present purpose we are dealing with animals at maturity in point of growth, that the skeleton is fully developed, and that we have only to accumulate flesh and fat. It must ever be borne in mind that it is not the quantity of food put in the stomach of the animal which accomplishes the object in view, but that which is thoroughly digested and assimilated by the healthy action of the viscera. The setting before a bullock half a cut. of roots the first thing in the morning, some hours afterwards its allowance of more solid and nutritious food, and repeating the feed of roots in the evening, appeared to me an irrational proceeding; and on the other hand, that a due mixture of the solid and fluid foods would probably aid the proper digestion of each. I resolved therefore to diminish the quantity of roots which I had generally heard recommended, one-half, viz: from 70 lbs. to 30 lbs. per day, according to the size of the animal, and to give a portion of these with each feed, as intimately incorporated as might be practicable with the more solid food. With this view I obtained Moody's cutter, which cuts the roots into thin ribbons, these we turn over amongst the chaff, so that the animals cannot avoid eating them together. I observed that the animals under the change to which I have adverted, thrived faster and were kept equally clean with one-third less litter, by weight, than we had found necessary on the former mode of feeding."

THE TURTLE SOUP BEAN, So-called, we find every year going the rounds of the papers as some new and wonderful discovery in the bean line; and just now there is a great ado made about it, in some of our agricultural papers that very much exposes their greenness. The *Frejole*, or Black Mexican Bean, deserves all the praise bestowed upon it, but it has been quite a common product of family gardens in the county of Philadelphia, for the last dozen years, having ourselves produced it about that length of time, and during this period have given seed to more than five hundred different persons, including parcels sent by mail to persons in almost every State of the Union. We shall again have a small quantity to give away in the spring.—*Germanstown Telegraph.*

We have seen it stated by those who profess to speak from experience, that guano sown upon wheat land, has proved an effectual destroyer of the chinch bug. We hope this experiment will be more fully tried in the regions infested by these troublesome insects.—*Ohio Cultivator.*

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., JANUARY, 1856.

THE officers of the Granville County Agricultural Society for the ensuing year are, Col. R. P. Taylor, Oxford, President; J. M. Bullock, W. A. Eaton, N. E. Canady, Dr. J. A. Russell, and Alexander Cooper, Vice Presidents; A. C. Harris, Henderson, Secretary; T. J. Blacknall, Treasurer; J. J. Wyche, Henderson, Corresponding Secretary.

WE send a copy of this number of the Arator to the Secretary of each County Agricultural Society in the State, with whom we propose, as Secretary of the State Agricultural Society, and as the conductor of a periodical devoted exclusively to the agricultural and mechanical improvement of the State, to open a correspondence; and to every one who accedes to our proposition, we will send the paper one year gratis. We desire, in the first place, statistical information from all the counties in the State touching their staple and other productions; their value, amount produced to the acre, how much made to the hand per annum, modes of cultivation; what the progress of improvement among them—the amount of produce, stock, &c., raised among them now, as compared with that raised annually previously to the establishment of the State Agricultural Society; what effect the operations of that institution appear to exert upon the spirit and practice of the farmers and mechanics in their section of the State, and upon the face of the country around them. We desire to collect this highly desirable information for the use of the State Society and the benefit of the State at large. We want, in the second place, a list of the officers of each county Society, and an official account of their proceedings, for publication in the Arator, to give general information, and thus keep up a constant, profitable, interesting and pleasant communion of those who are engaged in the same great cause, from centre to circumference of the State. All this matter we shall expect the Secretary to furnish. We desire, in the third place, to stimulate our improving farmers and others, to write for our paper—to communicate their experience and knowledge, especially to beginners, who

are earnestly calling upon them for information; and how can they refuse them this small favor?

ORGANIZATION! ACTION! FREQUENT MEETINGS! FREE COMMUNICATION AND MUTUAL INTERCHANGE OF VIEWS AND OPINIONS! *are necessary to success.*

WESTERN CAROLINA—THE GARDEN SPOT OF THE UNION—ITS FRUITFULNESS: THE TRUE POLICY OF THE STATE, TO GIVE IT COMMUNICATION AND INTERCOURSE WITH THE EAST.

We have always entertained the opinion that Western North Carolina possessed advantages for supporting a healthy, happy, dense and prosperous population, which could nowhere else be found on the continent; and we were among the first to advocate the policy of opening a great channel of communication between that magnificent portion of our domain and the generous East, as the first and only means of developing the vast resources of the whole, and elevating the entire State to the proud position among her sisters to which she is now rapidly advancing.

With a mild climate, fertile soil, abundant water power, rich and diversified scenery, numerous and valuable minerals, and under the government of the best system of laws in the world, nothing was wanting to make our great West an empire of herself, but an outlet to the markets of the world;—and true State policy required that this should be through *our own ports*. We heartily rejoice that this policy has been adopted; and that we are soon to see Rutherfordton and Asheville in the friendly and mutually happy embrace of Wilmington and Carolina City, and the abundant products of the teeming West passing through their hands to foreign markets. This will give rapid advancement to agricultural improvement. Every branch connected with husbandry will be introduced, and cannot fail to flourish, especially in the West. Not only a great superabundance of the grains, grasses, and root crops will be produced, but cattle, hogs, sheep, horses, and mules will be raised cheaply for market; hops, grapes, wine, and various fruits will be introduced and successfully cultivated, to augment individual wealth and swell our public revenues. The enterprising, skilful and industrious of other States who are looking out for bright and happy homes, and those of our own, who seek to improve their condition, would do well to look to Western North Carolina, and satisfy themselves of the superior advantages which she

possesses for all or any of the rural pursuits indicated in the foregoing hints; and also the unequalled advantages she possesses for manufacturing in every form and to any extent.

The following, from the Asheville News, furnishes a faint idea of the ease and abundance with which the substantial necessities of life are produced in that region. Now, that they have a prospect of getting their surpluses to market, they will be increased a hundred fold.

From the Asheville News, Dec. 6.

HOGS, CORN, &c.

Everything in the shape of *atables* is abundant in this country just at the present time. Such crops of corn were probably never before made in Western Carolina, as have been gathered the past Fall. In many places the yield has been such as to remind us of the "seven years of plenty," in the days of Pharaoh, King of Egypt, when the earth brought forth by handfull. The farmers in some sections, as we are credibly informed, have filled all their cribs, and then built rail pens in the fields to hold the remainder.

The wheat crop was excellent, but a large amount of it has been spirited away, to supply distant markets.

Potatoes, green apples, and dried fruit are abundant.

The hog crop is pretty good, though the reported shortness of the usual Tennessee and Kentucky supply, has a tendency to put the price asked to a high figure. We have heard of some sales of country pork at 5 cents, gross, and 6 cents, nett. This will be, we suppose, about the average figure. Tennesseans are asking more, but will not get it, unless it be in the payment of their tavern bills.

Corn is selling at from 35 to 50 cents—depending on the payment and the necessities of the seller. We have known several lots sold at 35 cents *cash*, while some of our merchants, in a spirit of liberality, are allowing their customers 50 cents in discount.

Flour is now worth \$7 a barrel, and will not, we think, be less—probably more.

Butter readily brings 15 cents per pound: eggs 10 cents per dozen; rye 50 cents, &c.

We have no doubt that corn will command 62 or 75 cents next summer, in consequence of the high price of flour, and the great number of cattle now in the country. The cattle buyers, who usually relieve our farmers of this part of their stock, have been scarce the past fall, and there are consequently many hundreds of beef cattle more

now in the country than is usual at this season.—And this has doubtless contributed to produce the "hard times" of which we hear and see so much.

Buncombe has a large amount of "provender" for the human animal, to spare, but alas for us, we have no way of getting it to points where it is needed, except by the antediluvian, expensive, wearisome mode, *hauling it*. And this brings us to the cause of all our woes—the want of a *Rail-road*. When shall we have it?

COUNTY FAIRS.

IN addition to those noticed in our last, Fairs have been held in the following Counties, showing that the work of reform and improvement "goes bravely on." We hope every county will have its well organized Agricultural Society and Fair this year; and we earnestly call upon the friends of the cause, in each county, where there is no Society, to go *forthwith* to work and get up one, auxiliary to the State Association, and commence operations in time to hold a Fair next Fall, and be prepared to contribute something to the State Fair. Farmers and Mechanics of North Carolina, arouse ye! Be resolved not to be out-done by other States.—Go to work this year with a determination to excel. By the way, what has become of our *Wake County Society*? Will the Farmers and Mechanics of Wake lie under the burning shame—the deep and disgraceful reproach of suffering their Society to remain inactive and lifeless? So long as this is the case, how can our intelligent farmers greet and look in the face their brother farmers from abroad, who are so actively and usefully supporting these institutions in their respective countries?—how can they expect to keep pace with the march of improvement, or even company with intelligent members of well conducted agricultural Societies? But to the Fairs.

MOORE COUNTY.—Premiums were awarded at the Moore County Fair to Evander Kelly for the largest yield of corn per acre "above natural production," 48 8-9 bushels. To Daniel Blue, largest yield of corn, natural production, 45 bushels. A. F. Harrington, largest yield of wheat, 28 bushels. J. R. McLeomore, largest yield of sweet potatoes per acre, 816 bushels. I. H. Rowan, largest yield of Irish potatoes, 618 bushels.

ROBESON COUNTY.—The N. C. Argus, of the 8th December, says, the list of premiums awarded at the Robeson County Fair was published in our last issue. As one of the editors of this paper was personally present, he is able to speak of his own

knowledge of the superior excellency of many of the articles on exhibition—and especially of those prepared by the fair hands of our country women. There were some of the finest specimens of quilt-making that we ever saw.

The horses and mules on exhibition were good—the other stock not so fine. Upon the whole the Fair, which was hastily gotten up, was highly creditable to the Agricultural Society of Robeson County, and to the public spirited gentlemen who compose it. We trust many more may follow this, the first, and each one be more interesting than its predecessor.

The upper end of Robeson is one of the best farming communities with which we are acquainted; nor do we know of any better or more intelligent population than that which inhabits there.—We regard it as no small compliment to have been invited to deliver the first annual address before an Agricultural Society in such a community.

SAMPSON COUNTY.—“Spectator,” in the Observer, gives the following interesting description of the Sampson County Fair:—

The first annual exhibition of the Sampson County Agricultural Fair was held on the 6th, 7th and 8th days of December. Through the promptness and energy of Mr. J. F. Shines, the whole work of enclosing the Fair Grounds was completed in the astonishingly short time of less than three weeks. The number of people collected together was supposed to be the largest ever witnessed in the county. The exhibition transcended the calculations of its most enthusiastic friends, and the greatest harmony and good order prevailed: many persons remarked that they had never seen so orderly a crowd for its size.

Floral Hall was well and amply filled with articles from the hands of Sampson's fair and industrious daughters. The most conspicuous and attractive articles were “The Rose Vine,” a quilt by Miss Eliza Friar. Miss Smith's quilt was also considered very superior. Two very rich Piano Covers, one by Mrs. Owen Fennell, and one by Miss E. C. Mathis. Mrs. Luke Graves' painting of Niagara, was regarded as a lively representation of that wonderful work of nature. Conspicuous among the paintings, we noticed a vase of flowers by Miss Kate E. Wright, a landscape by Miss Rainer, and one by Miss Kate Jarman. Among the many fine cakes Mrs. Badger's loaf cake was the only one that gladdened our tongue; it was good enough for the Emperor of all Russia to eat.

Among the fine stock exhibited, Mr. Frank Williamson's fine young bay saddle horse stood pre-eminent. W. W. Ingram's colt, 13 months old, was the best of colts. Mr. Van's gray pony racked his mile in 3 minutes 30 seconds. Mr. Owen Fennell's bay buggy horse completed his mile in 3 minutes 54 seconds. Mr. Barton's pony, and master Abram Boykin's pony, were also superior rackers. Mr. Moses' bay was a superior trotter as to regularity and good time, but by some oversight of the committee he was not noticed. Master Jas. Cox's four goats in a carriage created no little amusement when brought into the ring.

On the last day, after the regular exercises were closed, Mr. Van's gray made time in 3 minutes and 15 seconds, and Mr. Barton's 3 minutes and 17 seconds.

Mr. A. McKay's milch cow gave 8 quarts at one milking. Mr. Curtis Thompson had the mammoth hog; Mr. Everet Peterson the best sow and pigs; Mr. M. J. Paison, the best Durham bull; Mr. A. Johnson, the heaviest turnip, 10 lbs.; Mr. J. L. Boykin the best yield of pumpkins, 67, weight, 1,386 lbs., the product of one vine. Among the great curiosities was an Ostrich's egg, by Mrs. T. M. Lee; an artificial serpent carved from a gum root, by Mr. J. H. Bryan.

Among the poultry we noticed all sorts, sizes and colors, from a snow-white pea-fowl to a black duck, and from a Poland goose to a fan-tail pigeon. The entire exhibition was remarkable for the fineness and variety of the articles on exhibition.

NOTHING NEW.

The “composting” system, is universally believed among our farmers, to be of modern origin. This is a mistake. The idea is not only contradicted by the old proverb, that “there is nothing new under the sun,” but by a passage in Shakspeare's Hamlet, pointing directly to the “compost,” *then* and as a fertilizer. Young Hamlet, in his withering rebuke to the Queen, his “aunt-mother,” says:

* * * “Confess yourself to heaven;
Repent what's past; avoid what is to come;
And do not spread the compost on the weeds,
To make them ranker.”

This, 'tis true, is a figure of speech, but the truer the figure, the more impressive the moral lesson. Here, then, is evidence that the virtue of the “compost” was known and employed as far back

at least, as the year 1596, when, we are told by Malone, this tragedy was written by the immortal bard of Avon. Our old foggy farmers need not, therefore, be afraid to take hold of it as a new-fangled notion of book-farmers. It was in use and produced the results desired long before our continent was known to exist; and has been slowly introduced, as have been all our improvements, from the old World, as, in its turn, it came to be needed.

FARMERS' CLUBS.

THAT judicious and valuable periodical the American Farmer, Baltimore, very properly and earnestly recommends the formation of *Agricultural Clubs in every neighborhood*, which, being confined to narrow limits, can have frequent meetings and consultations, for mutual improvement, and which, so far from interfering with the larger county societies, will lead to their establishment, extension and greater general interest and usefulness. This idea was contemplated and substantially provided for in the Constitution of the Wake Agricultural Society, which the people of this county have unwisely and ingloriously—aye, shamefully suffered to go down. That instrument provided, we believe, that in each district or precinct, there should be regular meetings of the members residing therein, with the powers of sub-societies or clubs, whose proceedings should be annually reported to the general or parent Society.—This, we think, was an excellent arrangement; and if the Farmers of Wake had had the spirit and zeal to have carried it out, the beauty and excellence of the system would have been seen by the other counties of the State, by whom it would have been adopted; and by this time, instead of here and there a patriotic little band struggling to maintain the cause of improvement, we should have seen the whole State under a thorough, complete and efficient organization, giving “light upon the earth,” and moving on as harmoniously, regularly, brightly and beautifully, as the heavenly bodies—“the greater light to rule the day, and the lesser lights to rule the night.” Yes, the State Society might well be represented by the sun, and the county societies and precinct clubs by the moon and stars, which gem and illuminate the heavens. Will not the intelligent and patriotic friends of the cause, in the respective counties, give this matter their serious consideration, and take prompt and energetic measures to introduce and establish the system? Even a single individual, in each county with determined spirit and purpose, might do much towards it, and seconded by the unflinching efforts of half a dozen others of equal zeal and will, would bring it into successful opera-

tion. Who will take the honor—an honor which may be lawfully coveted—of being the first to move in this great and important work?

The Farmer says—“We beg our friends not to lose the opportunity of the winter’s leisure to form neighborhood clubs, in which they may meet together at least twice a month at each other’s houses, or wherever it may suit them, for the purpose of discussing and talking over any matters affecting their business. Let us repeat again and again, that the great want of the day among farmers is, that they come together in closer combination and organization. Their success in all matters affecting their interest depends entirely upon themselves, and they will take no effective action upon any question until they have the strength and power of moving together. Small organizations will tend to large ones: therefore we say *let every neighborhood have its own Club.*”

SOUTHERN CULTIVATOR.

We do not notice our exchanges regularly, because we find it is not their custom to give regular notices of each other. We find special cause occasionally, however, to speak of our cotemporaries, and it always gives us pleasure when we can do so with the hearty good will and earnestness with which we now call the attention of our readers to the *Southern Cultivator*—a thoroughly and permanently established monthly Journal, published at Augusta, Georgia—“devoted exclusively to the improvement of Southern Agriculture, Horticulture, Stock Breeding, Poultry, Bees, General Farm Economy, &c. &c.” illustrated with numerous Elegant Engravings—at one dollar a year in advance—DANIEL LEE, M. D., and D. REDMOND, Editors. The December number reminds us that a new (the 14th) volume will commence the present month (January,) and that now is the time for those who desire to subscribe, to send in their orders. North Carolina Farmers will find much in this paper to interest and instruct them.—It is a purely Southern work, has many practical correspondents, is ably conducted, and we hope it will be liberally patronized by the agriculturists of our State.

MAINE LUMBER FOR TEXAS.

We learn from the Bangor Journal that a large quantity of lumber, between two and three millions of feet, has recently been purchased in that city, by a gentleman from Galveston, for which the cash was paid. It will make about twenty cargoes. Three cargoes cleared on Saturday.

Quere. Might not North Carolina lumber from Wilmington and Beaufort be transported to Texas with profit?

FARMERS OF NORTH CAROLINA, IMPROVE!

To do this, you must first duly impress your minds with a sense of the importance and dignity of your calling, and finally resolve to exert yourselves, in all your operations, to reflect honor upon that calling. Your vocation is one of which you have reason to be proud. To render it respectable in the eyes of others, you must honor it yourself, and in so doing you elevate yourselves individually—raise yourselves to a state of independence and commanding influence and power in the community. In this condition we ardently desire to see every farmer of North Carolina: Hence, we again call upon them, one and all, to reflect, arouse themselves, redouble their efforts, and make a steady and constant progress in the march of improvement.

Your success depends, secondly, in a great degree, upon a thorough and correct knowledge of the true science and practice of your art. This is to be gained in only two ways. No man knows anything intuitively. All are dependent, for information how to proceed in any business, upon what is to be learned from others and upon personal observation and experience. The knowledge to be gained from others is written or oral, and generally comes to us through the press or from the lips. For the most part, the great body of the people have to rely upon the press for it. What is published on the subject in the shape of books or periodicals, is called agricultural literature or science, and is generally more accurate and reliable than verbal statements, which are liable to be misunderstood, misstated and misapplied at every step. It is, therefore, necessary that you read and study well the most important and valuable works on the subject. This cannot fail to enlarge your views, improve your minds, aid your practice, stimulate your zeal, direct your steps, encourage your industry, and increase the rewards of your labor.

You must, in the third place, often meet together and discuss and talk over the matters connected with your calling, and thus make the knowledge and experience of each other common property; and depend upon it, that knowledge and experience are of great value.

But, fourthly, it is of the highest importance, to make your information thus gained of value, that you practice what you learn that is good. Reading and talking, and observing, are important, but *PRACTICE*, diligently, energetically and systematically, is indispensably necessary to success.

By supineness, over-cropping, and bad management, we have greatly defaced and injured one of the fairest and finest countries in the world, and well nigh ruined ourselves. But it is gratifying to see among us many evidences of a determination to re-

form and arrest the distressing deterioration which but a short time ago presented its odious deformities everywhere around us. To effect this permanently, there must be a general and radical change of our course. All, everywhere, must arouse from their lethargy, and enter **HEART AND HAND INTO THE GREAT AND GLORIOUS CAUSE OF AGRICULTURAL IMPROVEMENT.** In other States, where this has long ago been done, all their "desert places are blooming and blossoming as the rose," their sterile and worn-out lands are groaning under the weight of golden harvests, and their people are happy in the possession of an abundance of the good things of life, and rapidly advancing still further in the path of experiment, improvement and progress. Is it not time that the people of North Carolina, in every county and neighborhood, were manifesting a decided zeal and interest in this great cause? Prompt and united action among those who are already alive to the matter, will soon put the masses in motion, who will, we trust, press nobly on until they raise our good old State to the high and proud position to which she is entitled among the great agricultural States of this vast Republic.

AGRICULTURAL SOCIETY IN ROCKINGHAM:

We are gratified to learn that an Agricultural Society has been formed in Rockingham county.—We clipped the following from an exchange paper last month, giving this information. We request the Secretary to give us a full account of the organization of the Society, and such other information as he may deem interesting to the public:—

"The meeting was called to order and its objects explained by George D. Boyd, Esq.,—after which the Hon. Thomas Settle was called to preside, and J. W. Burton, Esq., appointed Secretary. A committee, consisting of Dr. R. H. Seales, Dr. E. T. Brodnax, G. L. Aiken, T. S. Galloway, and George D. Boyd, Esqs., was appointed to draft a Constitution and By-Laws and report to the next meeting, to be held on the 18th of this month. We are gratified at this movement, and trust that all the other counties in which such societies do not exist, will go to work and form them. We hope to see Rockingham well represented at the next State Fair."

LARGE YIELD.

The Louisburg Eagle states that the Rev. N. J. Barham, near that place, has gathered from one acre of ground *fourteen barrels and a half* of corn! This piece of corn had suffered severely from a wind before the fodder was pulled—having nearly a wagon load of stalks broken completely off.

TRANSACTIONS OF THE N. Y. STATE AGRICULTURAL SOCIETY.

Our grateful acknowledgments are returned to B. P. JOHNSON, Esq., Secretary of the N. Y. State Agricultural Society, for a well bound volume of the "Transactions of the N. Y. State Agricultural Society, with an abstract of the Proceedings of the County Societies—Vol. XIV—1854." This volume contains 951 octavo pages; and the Secretary truly says, "many of the papers are of permanent value, and will aid the farmer in his efforts for improvement." We have a copy also of this work, received from the same source, for our State Society; and we hope that body will take knowledge of it, and follow the example set by the Empire State. In this, there are two important things to be observed—the peculiar mode of proceeding by *parent* and *auxiliary* Societies, and the manner in which their transactions are presented for the public good.

PATENT OFFICE REPORTS.

We are indebted to the politeness of Hon. CHAS. MASOX, Commissioner of Patents, for a copy, each, of the Patent Office Reports for 1854, for the Mechanical and Agricultural Departments. These large and well filled volumes contain much very valuable and reliable information to the agriculturist, and show commendable zeal and ability in the Commissioner, in his useful employment—collecting and arranging in this magazine of knowledge, practical information from all quarters of the globe. These reports have done and are still doing good service in the work of Agricultural and Mechanical improvement.

WEEVIL IN WHEAT.

To preserve Wheat from weevil is a matter of great importance, especially at this time, when the production of that article is so rapidly increasing in every part of the country. For this, many remedies have been proposed, some of which, being troublesome and expensive, are but little tried. Some say, thresh out the wheat immediately after harvest, and let it lie in the chaff, and the weevil will never injure it; others say, winnow and sun it, and it will kill the insect in embryo; sowing lime over the field, when the wheat is in bloom, and damp, so the lime will adhere, it is said, will drive away the enemy effectually, when it comes to deposite its eggs.

M. Caillat, of France, recommends the use of tar, as a certain and economical agent of their destruction. He says—"The efficacy of tar in driving away the weevil and preserving the grain, is an incontestable fact. My father had, a long time ago, his granaries, barns, and the whole house infested with these insects: so much so that they penetrated into all the

chests and among the linen. He placed an open cask, impregnated with tar, in the barn, and then in the granaries; at the end of some hours the weevils were seen climbing along the walls by myriads, and flying in all directions away from the cask. On moving this tarred vessel from place to place, the premises were in a few days completely cleared of these troublesome and pernicious guests. The agriculturist who wants to get rid of weevils, may, as soon as he perceives their presence, impregnate the surface of some old planks with tar, and place them as required in his granaries." Care must be taken to renew the tar from time to time in the course of the year, to prevent the return of the insects."

ROOT CROPS FOR STOCK.

On visiting R. F. MOORE, Esq., of this city, some time last month, and passing through his garden, we were more than ever impressed with the importance and facility of raising root crops, by our farmers, for stock. Mr. Moore, it is known, being one of our most eminent Lawyers, is burdened with the business of his profession; yet he finds time to give his personal attention to his garden of some one and a half or two acres, which is nicely and skillfully cultivated according to the most approved methods of book-farming; and it handsomely repays the labor, by the bountiful crops by which it delights the eye and satisfies the appetite of both man and beast. The product of this garden, we doubt not, would, with rigid economy, furnish a yearly support to a small family—demonstrating, by the way, how easily the poor, who are hanging around the skirts of our towns and villages, hiring themselves out by the day, living in miserable rented huts, and half the time without fuel, without food, and without comfortable clothing, might, by retiring into the country, getting a few acres of land of their own, making rich and thoroughly cultivating the soil, place themselves and families above want, live comfortably and be respectable. Why will they not do it?

Mr. Moore raised at the rate of some six or seven hundred bushels of beets to the acre; and the large pile of *whalers*, taken from a small space, was really a sight worth beholding—many of them weighing from 10 to 16 lbs. Nothing is better, chopped up and mixed with meal or other dry food, (raw or cooked, but better cooked,) for milk cows or hogs or other stock, than beets. Let our farmers each have a patch for the purpose.

DETERMINE to excel. Exert yourself to be the best farmer in your neighborhood. Do your work a little earlier, a little nicer, and a great deal better than any body else.

TENNESSEE.

On the subject of agriculture, Gov. Johnson writes so sensibly that we deem two passages of his message worth transcribing :

"The Legislature, at its last session, passed an act to establish a State Agricultural Bureau, with county and district societies subordinate thereto, &c. By this act the Governor of the State was constituted President *ex officio* of the Bureau. The Bureau was organized, according to law, on the 20th day of April, 1854. Full details of its action will be laid before you by the Secretary of the Bureau. From his report, you will see that county societies have been chartered in seventeen counties : division fairs were last year held in the eastern and middle divisions of the State, and by the Sumner county society, and that a new and beneficial interest has been awakened on the subject of agricultural improvements. Division fairs will this year be held in each division of the State, and the biennial State fair is now in progress near Nashville, under your own immediate inspection. The agricultural interest has always been and will probably long continue to be the leading interest of Tennessee. It is wise and proper that it should be fostered and encouraged by the Legislature, by all reasonable and legitimate means. I am of opinion that the law of 1854 was a wise and salutary step in the progress of agricultural and mechanical improvements and reform.

"Nature has been prodigal in her gifts to our State, and the representatives of the people can render no service of greater value to their constituents than by affording a judicious encouragement to associations having for their object the development of the agricultural and mineral wealth of the State, and stimulating the mechanical skill and industry of its citizens. When our people learn that the necessity for labor is a blessing rather than a curse ; that 'he who causes two blades of grass to grow where but one grew before, is a greater public benefactor than he who conquers armies ;' and that honor, fame, and fortune, may be as certainly earned in the workshop of the artisan as in the offices of the learned professions, and as freely accorded by the public sense to the former as to the latter, then we shall have lived down an obstacle in the way of State progress as absurd as it is injurious."

BLEEDING GRAPE VINES.—A writer in the N. E. Farmer, says that common hard soap applied to the end of a recently pruned vine will effectually stop the bleeding.

A SUBSTITUTE FOR SUGAR CANE.

THE annexed letter from Rev. Mr. Wilder, a missionary of the American Board in South Africa, to one of the editors of the Journal of Commerce, will be interesting to agriculturists, as bringing to their knowledge a substitute for the sugar cane, which is represented to be capable of culture wherever Indian corn will grow. Whether it will be found more economical to cultivate this plant at the North, than to purchase sugar grown in Louisiana and Brazil, is yet to be ascertained ; but at least it will afford the abolitionists a chance to show their consistency, if they so elect. Indeed they might do so now if they pleased, either by using maple sugar, if they can get it, or denying themselves for conscience sake. The general name of the new plant is *IMPE*, of which there are several varieties. Mr. Wilder has sent three of them, as will be seen by his letter. The seed is small, about the size of broom corn seed, which it resembles. Indeed, the plant itself, from the description given of it by the correspondent, must belong to the Indian Corn family. Every farmer knows that the stalk of our common Indian corn contains much saccharine matter, and it has sometimes been expressed, and reduced to molasses by boiling. The Journal says : We shall give the *IMPE* a fair trial, so far as culture is concerned, and will report the result to our readers in due time.

UMTVALUME, Natal, }
South Africa, Jan. 6th, 1855. }

I herewith send you a few seeds of a plant indigenous to this country, for the manufacture of which into sugar a patent has recently been obtained in England by a gentleman from this colony.—Those interested in the patent have no doubt of its entire success, and that it will bring streams of gold into their pockets.

The plant is called *Impe* (vowels as in French) by the Kafirs, but they distinguish some two dozen varieties by specific names. I send you three varieties, with names on each paper, viz: *Ufutana*, *Umogwini*, *Iblosa*. While growing it resembles Broom corn, and produces its seed after the same manner. The natives of Natal plant it with Indian corn, and cultivate it in the same manner, and it comes to perfection in about the same time, say from 3 to 4½ months. They cultivate it wholly for its saccharine juice, of which, under but slight pressure, it yields a much larger quantity than does the common sugar cane, but not of so rich a quality. I should say that the same bulk of juice contained from one-half to three-fourths as much sugar as the juice of common cane. The

advantages it has over common cane, are, that it grows well wherever Indian corn does; it is raised from the seed in four months, ready to be made into sugar; it grows on high lands as well as on low, and the abundance of seed it produces, may be used for provender for horses.

I give you below the names as called by the Kafirs, of the different varieties with which I am acquainted:—*Nitwe*—very long, 12 feet or so, one half the head hangs down. *Hibohla*—head hangs flowing around the stem. *Ungezana*, *Ihlosa*—has two black stripes on the stem, just below the head. *Ufutana*—small erect head, an excellent kind.—*Ilienga*—drooping head. *Uboleleka*—has an appearance of decay. *Usompofu*—buff colored.—*Uochlana*—seeds like Guinea corn of West Coast. *Ulabemba*—has two distinct heads. *Uboyana*—has down on the seed. *Utyaka*, *Imfemkulu*—tall thick stem; spreading head. *Umfimbainulyapa*—very long joints. *Umhambatule*, *Umhlagonde*—red leaves and erect head. *Inyao*—long joints, drooping head. *Iidakandoda*—erect head, black seeds; fit for use before the seed ripens. *Anazchwiko*—red cane. *Umswazi*, *Ihlokonde*, *Umswini*, *Umdengchula*.

I hope you will cultivate the seed I send, or give it to some agricultural friend who will, and if you think proper, notice it in the Journal of Commerce. I understand that there will be an effort made to take out a patent for its manufacture into sugar in the United States. Yours truly,

H. A. WILDER.

Missionary A. B. C. F. M.

To prevent metals from rusting, melt together three parts of lard and one of rosin, and apply a very thin coating. It will preserve Russia iron stoves and grates from rusting during summer, even in damp situations. The effect is equally good on brass, copper, steel, etc. The same compound forms an excellent water proof paste for leather. Boots, when treated with it, will soon after take the usual polish when blacked, and the soles may be saturated with it.

LAST WEEK. (says the Northern Farmer.) Joseph Adams, aged 86 years, while hunting bees in Sherburne, was attacked by an unruly steer, which prostrated the old gentleman on the ground. With the animal upon him, he thrust his fingers into its nostrils, and with the other hand severed the brute's throat with his jack-knife.

All the varieties of the apple have been produced by cultivating the crab.

For the Arator.

MR. EDITOR: As you request Farmers to give you their experience, in compliance therewith, I would state, that I made an experiment in composting, on a small scale, that was satisfactory and encouraging to me. But I must here tell you, I make no pretensions to a knowledge of science, though I have read enough to know that it must be useful; and I can see the good effect of certain combinations, if I cannot understand the reason of it. But, to proceed: I hauled to my field a quantity of rich dirt dug out from the side of a branch; the scrapings of my hog pen, three two horse loads; five two horse loads of pure stable manure; five bushels of night soil, which last I mixed up into a liquid state, in a hole dug in the earth, with two bushels of ashes and one bushel of plaster. Of these materials, with two bushels of oyster shell lime, I made a compost heap, being all I could conveniently get. I first put down a bed of the earth, mixing with it a portion of lime, sprinkling the lime on lightly as the dirt was shoveled on. I then saturated it with the liquid from my hole in the earth, and put upon that a thin layer of the manure; and thus I carried up the pile, putting alternately a layer of dirt and lime and a layer of the stable and hog pen manure, (first one and then the other,) until my materials were exhausted; when the whole mass was covered six inches deep with dirt from the base of the pile. It stood until the 1st of April, about three months. It was well mixed in moving it, and was put in the hill for corn—a shovel full to the hill—in a totally worn out three acre field, inclining to a mulatto, stiff land, which would not have produced 4 bushels to the acre. It was then planted and cultivated in the ordinary way.—The yield was 55 bushels or 11 barrels to the field—a little over 18 bushels to the acre—leaving my field materially advanced towards permanent improvement.

It took three hands, with a two horse wagon, six days to make and then distribute the manure, which at 50 cents a day, would cost \$2.00
Use of wagon and team, 4 days, 6.00
Cost of lime, plaster and ashes, the only things for which money was paid, 1.50

\$16.50

Credit by 3 barrels extra per acre, made in consequence of the manure, 3 barrels at \$3 per barrel,

\$27.00

Deduct \$16 for expense, leaves

\$10.50

If I make no charge for the wagon, which would have been idle if the manure heap had not

been made, the \$6 charged above for that in the expenses, should be thrown out, and added to the credit, thus, \$6,00

Showing a gain of \$16,00

by six days' work of three hands—two men and a boy—to say nothing of the permanent benefit to the land, and the increased amount of fodder, which would in fact, pay for all expenses, and leave me a profit of \$27 on six days' labor of three hands, which, it appears to me, *paye*.

I say nothing of the cost of cultivation; for that had to be done any how, and, without the manure, for a product of about three bushels to the acre.

P. S.

Old Fields, N. C., December, 1855.

THE NEW YEAR.

A happy new year to all of our readers, and to all the friends of improvement, readers or no readers!

We congratulate them on the successes and happiness of the past, and the brightening prospects of the future.

Though we have had to pass through a year of pecuniary embarrassment, and some have had to mourn the loss of dear friends and to suffer from personal disappointments and difficulties; yet the labors of the husbandman have been crowned with extraordinary abundance and highly remunerative prices; general health has prevailed within our borders—no pestilence has depopulated our towns or swept over our plantations; the work of improvement has gradually advanced among us; a beautiful Providence has smiled over the land; and our people have been, and are still, prosperous, contented, and happy.

We have much cause of gratitude to the Father of Mercies for these blessings; and of encouragement to prosecute with diligence our ordinary duties, and to renew our efforts in the work of improvement and the development of the vast resources of the State which we have the good fortune to inhabit.

Let us, then, this first day of the year "turn over a new leaf." Let us resolve to attend more faithfully, in the future, to all of our duties, and especially to exert ourselves more zealously and actively in the cause of reform and progress in all that relates to husbandry and civilization. Thus shall we better our individual condition, and make our State not only more lovely, but glorious.

The Indians regard a thin husk on corn as an indication of a mild winter. This being true, the one just approaching will be of the gentlest kind, as the husks are very thin.

JANUARY.

In the hastily prepared remarks which follow, we do not pretend to lay down any regular and detailed plan of operations for this month, but merely throw out a few seasonable hints touching some things which may be more conveniently attended to now than at any other time, and which should, by no means, be postponed to a later period.

How to spend the Evenings.—The nights are much too long to be devoted entirely to sleep, and should not be spent in idleness or dissipation: To make them profitable and agreeable, the time should be employed in reading, study and social intercourse with our neighbors, as well as our own families.—Clubs should be formed in each neighborhood, so as to be convenient for assembling, and regular meetings held for the free discussion of subjects connected with our business, at each other's houses, once a week. One new topic at least, should be selected for consideration a week previous to the meeting.—These meetings will increase in interest and usefulness, in proportion as they are regularly and promptly attended; and the amount of pleasure and profit that will be derived from them, cannot be estimated. If, at any place, only three or four can be induced to unite in them, let that number go ahead, undiscouraged and undismayed. The day of small things will not be despised, and they will, in due time, increase and reap a rich reward, if they faint not.—Much, very much is to be gained by frequent intercourse and interchange of opinions with each other. It not only increases knowledge, but strengthens the bond of friendship and kindly neighborly feelings and sympathies, stimulates our zeal and fixes our firm resolve to improve. The evenings spent at home, should be devoted to reading our agricultural and other papers, which should be done, as often as convenient, aloud to our families, young and old, drawn up around our fire-sides, with such observations upon what we read as we may pleasantly and profitably make to our hearers, and such as may, in the freedom of the cheerful family circle, be elicited from them: Also, to the reading and study of agricultural books, to learn, remember and practice the many useful hints and numerous explicit rules of instruction with which the well digested and accumulating works on the science and practice of agriculture abound. There are many valuable works that should be found in our libraries, and with the contents of which we might thus make ourselves familiar, and awaken in the minds of our children a love of reading and thirst for knowledge; and by that means save thousands from ignorance, vice, penury and disgrace. Among the books of our agricultural literature, should be found Leibig's works, Johnston's Elements of Agricultural Chemistry and Geology;

Allen's Domestic Animals; Youatt and Martin on Cattle; Youatt on the Horse, Hog and Sheep; the American Muck Book; Danas' Muck Manual; the Complete Farmer and American Gardner, by Tressenden; the Agricultural Dictionary. A perusal of these, and other valuable works, during the long winter evenings, will make us better farmers, better men, and better citizens.

Provide your Summer Wood.—This is almost universally neglected: Yet every one must see the advantage of attending to it now. We can better spend a week now in this work of necessity, than a single day when the cares of seeding and cultivating our crops are upon us.

Fencing.—This is the time for making and repairing our fences. This, for the most part, should be done in winter, and no month better for it than January; but it is woefully neglected, simply because there appears to be no immediate necessity to keep out stock.

Shelters for Cattle and Manure.—Every barn-yard ought to have a shelter for manure, and every cow lot should have good and substantial shelters separating the weak from the strong cattle. Remember, shelters are cheaper than provender. If not already provided, set about and erect them speedily. Let them be substantially built: Work well done, is always cheapest in the end.

Hauling Manure.—This is another work which may be profitably done this month, taking care not to drop it in little heaps, to be washed away, but in large piles, in convenient places in your field for distribution, and put up in house-roof form, covered with earth, and left so as to shed rain. This work is much easier done now than in spring, when the manure is wet, and the roads and fields mushy.—Haul leaves and woods mould to your lots in abundance.

Muck.—Haul muck to these heaps, and as much as possible mingle it with the stable manure; it will absorb the gasses from the decomposing mass, and by contact with the manure and exposure to the air and frost, the muck itself will undergo an important change, and become a valuable fertilizer.

Winter Plowing.—Proceed with that when the ground is in order for the work. Break deep and throw high the furrows, for the action of the frost.

Shrubbing, Ditching and Cleaning up, should not be neglected.

Farm Implements.—The New England Farmer, an able and valuable Journal, published in a country, where they know the value of good implements, and understand well true domestic economy, says, "your implements should all be put in perfect order, ready for use in the spring: if any need painting, a coat applied now will get hardened through the winter,

and thus last twice as long as when applied just before the implement is wanted for use. Everything of the kind should be placed under cover."

Cows, Sheep and Hogs.—Pay particular attention to the wants of these animals during this month.—Don't let them fall off for the want of food or shelter. Neglect in the midst of winter is the grand reason why so many animals perish in the "trying month of 'march,'" and so many require expensive nursing in early spring. "It is cheaper and every way better, (justly remarks the Farmer,) to keep all our domestic animals in good condition."

The Garden.—Put your beds in order, have them richly manured, and sow seeds for early vegetables. If not already done, prepare a hot-bed for plants.—Be determined to have a garden this year worthy of the name.

REFLECTIONS FOR THE NEW YEAR.

THERE are many things to which it would be well for the people of this State to direct their attention at the opening of this new year. To accomplish all that is desired by the friends of reform, a radical change must take place in the policy and practices of all. "Capitalists must apply their means to introducing new branches of industry and sources of wealth, Mechanics must extend and improve their business, Merchants and Professional men must encourage them in preference to those who work out of the State, Farmers must read much and practice more, our own market towns must be built up, system must be introduced into every branch of business, and improvement in every department must be accelerated. We must make our own agricultural implements, plantation machinery, wagons and carriages, brooms and horse buckets; household and kitchen furniture; boots and shoes; domestic cloths, &c. &c. We must raise sheep; make our own Irish potatoes; supply our own, and, in part, the foreign demand for apples; make our own hay, butter and cheese; raise our own pork, horse and mules; and greatly augment all the staple products now raised in the State. It is the peculiar business of our State and County Agricultural Societies to labor for these ends. Let all resolve to accomplish more this than any previous year.

THE CALIFORNIA FARMER.

We are much pleased to enter on our exchange list the California Farmer, published at Sacramento, by Messrs. Warren & Son, weekly, at six dollars per annum, in advance. It is neatly printed, ably conducted, and contains a great variety of information that would interest our readers. Sacramento is the seat of Government of the State, and the State Agricultural Society, which appears to be well organ-

ized, has its head-quarters at that place, where it is conducting its operations in a style commensurate with the good it aims at and the great interest it represents. It has a building appropriated to its use, in which its meetings, we presume, are held, and rare specimens of the productions of the earth and artistic skill are constantly kept on exhibition. It is no temporary affair, flaring up by occasional ebullitions, but a permanent and steady light, shining brighter and brighter day by day. Would that our Society could do its work in the same earnest and systematic manner. The Farmer of the 9th November, calls attention to two potatoes at the State Societies' Rooms, one of which weighs 11½ lbs. and the other 12½ lbs., raised by Hooker & Fern, who left others in the ground to grow until they reach the round weight of 20 lbs.

Sacramento must be a great and lovely place. The Farmer, in calling attention to some of its attractions, mentions the Levee around the City; the Water and Gass Works; the State Agricultural Societies' Rooms; the Pomological Gardens and Nurseries of A. F. Smith; the fine Gardens and Nurseries of Rev. Mr. Wheeler, Messrs. Kulan & Co.; and numerous fine residences and gardens of private citizens of the City; Mercantile houses, manufacturing and mechanical establishments, mills, foundries, many first-rate hotels, &c. &c., showing a high state of improvement and rapid progress. We are almost tempted to pay our brothers WARREN & SON a visit.

☞ If our friends will get up and send us two thousand five hundred new subscribers, now at the beginning of this year, which they can easily do, we will pledge ourself to lay out five hundred dollars in useful and ornamental embellishments, and to secure able assistance in the Editorial Department. If friends of the cause near every post-office would take subscription lists among their neighbors, in less than a month the number could be secured. An average of 30 names to each county will more than bring the number specified. In some counties several hundred could easily be procured. Remember, the good of the cause requires the wide circulation of Agricultural papers.

OSAGE ORANGE SEED.

We have been politely presented, by P. F. PESCUD, Esq., of this City, with a pound of the seed of the Osage Orange, (*Machura lanuginosa*)—one of the most celebrated plants for hedge fencing that has ever been tried in this country. It is said a dense fence can be raised from it in four years, that will turn all animals, from the smallest to the largest, and even thieves; and that it may be so preserved with much less labor (annual trimming) than is required to keep an ordinary fence in repair; as an active man can clip a mile of hedge in a day; that it is also the most durable, as well as most protective and ornamental fence that can be made. It is proof against wind, water and fire. At the lowest estimate, not less than 9,000 miles of this hedge were set in the spring of 1855. It thrives in Connecticut, Vermont, Northern New York, Wisconsin and Canada, and would no doubt flourish in the mild climate of North Carolina. It was first introduced into Illinois from the wilds of the South-West, where its virtues were

satisfactorily tested by Prof. Turner. It is now recommended by such men as Jas. McGowan, Esq., of Philadelphia; Mr. Bateman, of the Ohio Cultivator; Dr. Wadler, of the Horticultural Review; Prof. Turner, of Ill.; and Dr. Redmond, of the Southern Cultivator. The seed and plants ready for setting, are raised in great quantities by H. W. Pitkin, Manchester, Conn., and may be procured directly from him, or from Mr. P. F. Pescud, Druggist, of this City. Full directions for planting and cultivating will be given to purchasers. Now is the time to get a supply, as early spring is the time to sow or plant.

MAMMOTH TURNIP.—Thos J. Lemay, Esq., the Editor of the "Arator," has sent us a turnip, taken from his ruta бага patch, near this City, which weighed fourteen pounds with the top, and ten pounds without the top. This turnip may be seen at the Store of Messrs. W. H. & R. S. Tucker.—Mr. Lemay has been very successful this season with his sweet potatoes and turnips. Who can boast a larger turnip than this ruta бага?—N. C. Standard.

Our potato to which the Standard alludes, weighed 9½ lbs.

INVENTIVE GENIUS OF THE AMERICANS.—Few are aware of the marvelous triumphs constantly going forward in this country. A cotemporary says:—

"We have seen lately, as a specimen of rare American mechanical genius, a machine costing not over five hundred dollars, invented by a working man, which takes hold of a sheet of brass, copper, or iron, and turns off complete hinges at the rate of a gross in ten minutes, hinges, too, neater than they are made by any other process; also, a machine that takes hold of an iron rod and whips into perfect bit-pointed screws. This is also the invention of a working man; and both of these machines are superior to anything of the kind in the world. No other process of manufacture can compete with them.

THE MEADOWS OF AMERICA.—Governor Wright, of Indiana, (an extract from whose speech will be found in this number of the Arator,) says that our grass crop is not properly appreciated. No crop approaches so near a spontaneous yield, and none yields so large a profit. The hay crop of the United States in 1850, he estimates at 14,000,000 tons; that for 1855, he estimates at 15,000,000 tons, which is worth \$150,000,000; while the cotton crop is valued at only \$128,000,000. Of this crop more than half is produced by four States—New York, Ohio, Indiana and Illinois. The grass crop which is used for pasturage is at least as valuable; so that single herb is worth annually over \$300,000,000. Few people will believe that the grass crop of New York State is worth more than its wheat, and yet statistics show that such is the fact.

GUANO.—The Guano island lately discovered in the Pacific by two American navigators, and to protect which, a U. S. Vessel has been despatched, is said to be covered with an immense deposit of the purest guano. It is stated that at the lowest computation the island contains 350,000,000 tons of guano; that being situated in a latitude where it seldom, if ever, varies, it is of the very best quality; and that in consequence of the trade winds favoring, voyages may be made much sooner than from the Chincha Islands.

If these statements are true, the Peruvian monopoly and the consequent high prices will soon come to an end.

BARNUM announces his intention to erect a Lyceum Hotel in New York, embracing within its walls a Lecture and Concert Hall, a Library and Reading Room, Restaurant, rooms for instruction in music, and adult evening schools, and a large saloon for the social enjoyment of families and friends, and all this without the use or presence of intoxicating drinks.

VALUE OF REAL PROPERTY IN THE UNITED STATES.—The assessed value of Real and Personal property in the United States, (says the Real Estate Register) is given at \$6,000,000,000, while the true or estimated value is given as amounting to \$7,133,369,725. The amount is made from official returns of property for taxation.

GREAT CORN CROPS.—In some parts of Pennsylvania the corn crops are said to be greater in the aggregate than at any time before in fifteen years.—From seventy to ninety bushels per acre is a common yield, and one field, owned by Dr. Wm. Ragen, of Washington county, made one hundred and twenty-two bushels per acre.

HIGH PRICES.—At the sale of the property of John S. Jeffries, deceased, in Mecklenburg county, Va., on Tuesday, a negro boy, only 18 years of age, and a common field hand, brought \$1300, and another not as likely, brought \$1250. Corn brought \$5.35 per barrel.

PREACHER TURNED FARMER.—Elder Knapp, formerly a famous revival preacher, is a farmer in the neighborhood of Rockford, Illinois, with a farm of 1200 acres, stocked with cattle, hogs, horses, &c. His land will sell for \$40 an acre.

The North Carolina Railroad is finished to Greensborough, from the East, and the cars have entered that town. The Western end is completed to within 4 or 5 miles of Greensborough.

GRASS CULTURE.

By GOVERNOR WRIGHT.

"Our zeal, industry, and wealth, have been freely expended in the practical illustration of improved methods of cultivating grains, fruits and vegetables, and in the improvements of our stock, farming implements, and machinery. We have imported, at great expense, all kinds of domestic animals; our State fairs and our county fairs annually furnish reports, essays, and addresses, on every branch of agricultural industry; we have books and learned treatises on horses, cattle, sheep, swine, and even poultry; and many volumes of useful essays on cotton, wheat, corn, potatoes, fruits, rice, flax, hemp, and tobacco. All well enough; yet, at this day, we have not a book, report, or pamphlet, that furnishes the American farmer with even the names of the grasses of this country, to say nothing of that essential information which, by the test of science, fixes the value of each kind, and determines the question of its adaptation to different soils, and to different sections of the United States.

"The American farmer cultivates, or, to speak more correctly, he bestows some attention on the cultivation of ten or a dozen kinds of grass, while the teeming earth, without tillage, furnishes innumerable varieties of this staff of animal life, in all latitudes and longitudes throughout our wide-spread country. No crop approaches so near a spontaneous, uncultivated yield, as the grass, and none pays so large a profit. While it is impossible for me to state, with precision, the annual value of this crop, I do not hesitate to express the opinion that, in this country, the hay crop alone, imperfect as it is, and receiving so little attention is greater in value, at this day, than the combined crops of cotton, rice, and tobacco.

"According to the census of 1840, the mere hay crop of the United States was 10,248,108 tons; in 1850, it was 13,838,642 tons. I estimate the hay crop of 1853, at 15,000,000 tons, which, at ten dollars per ton, would amount to \$150,000,000. The cotton crop of 1853, is valued at \$128,000,000. Of the hay crop, more than one-half is produced by four States, to-wit:—New York, Ohio, Indiana, and Illinois—your own State producing more than one-fourth of the whole; and yet no State has made this article a primary object of cultivation.

"We treat the hay crop as one of minor importance. But little attention is paid to it:—the meadow must wait till the other crops are disposed of; then the grass is cut, too often without any reference to its condition, or any well prepared place for its reception.

"The value of the hay crop of this country, however, is not equal to the value of the grass crop ap-

propriated to pasturage, even in the present unimproved condition of the latter crop. But if we make the values only equal, then the total value of the annual grass crop—hay and pasturage—of the United States, may be estimated at \$300,000,000, or an amount equal to the aggregate value of all other agricultural products of our country, excepting wheat and corn.

"I use the word 'grass' not in its strict botanical signification; but, according to common usage, to designate the herbage or plants which constitute the food of cattle and other beasts.

"Beginning with the few facts which are known in relation to the number and qualities of the grasses of this country, we should by means of scientific investigation and judicious experiments, endeavor to increase our knowledge, with respect to this great branch of agricultural interest. We find one kind of grass in this latitude, which, it is said, is well adapted for making a sure crop of hay, and good pasture. It stands the drouth well; is not much injured by rain in harvesting; forms a feeble sod; and is easily subdued when the meadow is to be transformed into a grain field. Another, elsewhere, that is suitable to wet prairies; less exhausting to the soil than the first; and is especially recommended for cultivation in the early settlement of a country, before a system of drainage can be effected. Another, said to be very productive, and exceedingly nutritious; and, when once well set, it forms a permanent sod; but it is slow in taking root, and will not stand our summer heat. Another which grows in tufts, and, in autumn, its leaves spread out most vigorously, for fall pasturage. Another, from its aromatic and astringent qualities is rendered agreeable to the palate of stock; it retains its verdure in the depth of winter, and, in the beginning of spring, it shoots forth with vigor. Another, with its rich, long slender leaves, two feet in height, is seen in the fine uplands of the limestone region; in autumn it falls over, in thick windrows, matting the whole surface together, and retaining its freshness and nutritious qualities amid the frosts and snows of winter. Another, such as the grass which forms the celebrated pastures of the Swiss Alps, and those of the Tyrol, is peculiarly distinguished for possessing qualities favorable to the secretion of milk, and is, therefore, preferred for milch cows. Another, it is said, will endure cold and shade, without suffering injury; another is only suitable for the light and heat of summer; another, rich and nutritious, comes up after the crops are laid by, and affords fine crops of hay; another, adapted to warm, moist river bottoms, and, in some sections of our country, yielding five tons of hay per acre, is highly valued by some graziers; another is found growing on dry, gravelly soil;

and hill sides; and part of its value consists in the numerous seeds which are retained in the pod, long after they ripen—serving as food for beast and fowl.

"'Grasses,' said a distinguished philosopher, 'are Nature's first care.' They are the most general, extensive, and 'hardy' of the earth's productions.—They are nearly of endless variety, and adapted to almost every climate. They endure the trampling of men and beasts, the browsing of cattle, the parching drouths of summer, and the snows and ice of winter: and spring into new and often more vigorous life, under influences which to other plants would prove destructive.

"On mountain tops, where the warmth of the summer's sun is not sufficient to ripen their seeds they live by their roots, and with thick clustering leaves protect these roots, producing thereby the densest and most beautiful verdure. And it is reported by one writer that, for the preservation of the grasses in those localities where the ripening of their seeds is important, the wild beasts, guided by a remarkable instinct, leave untouched the stems that support the flowers. Do not the profusion of grasses with which the earth is clad, and the laws which so remarkably preserve them, indicate that they are worthy of the special attention and culture of those for whom the earth is ordered and established in fertility and beauty?" * * * *

"I regard it as a well settled principle, that there are, in every country, indigenous plants which, when their qualities are fully understood are precisely those which are designed by a beneficent Providence, to furnish the proper elements for the support of animal life. The same principle prevails in relation to soils, and their capacities to support vegetable life. Clay, sand, marl and shell, lying in close proximity to each other, afford to the intelligent farmer or planter, the means of increasing and preserving the fertility of the land.

"Although neither the number nor the names of our indigenous grasses have been ascertained, we cannot be ignorant of their great variety, richness and durability, when we look over our country, from the 49th degree of north latitude to the extreme south, and see the health, thrift, and superiority of our domestic stock, and the number and condition of the wild animals of our forests and prairies.

"On the spurs and slopes of the Rocky Mountains and on the head waters of the Red river of the north, immense heads of buffalos subsist on a kind of grass which retains its freshness throughout the winter and which remains green and nutritious while other grasses of the plains and valleys are dried up by the heat and drouth of summer."

BRILLIANT WHITEWASH.

MANY have heard of the brilliant stucco white-wash on the east end of the President's house at Washington. The following is a recipe for it as learned from the *National Intelligencer*, with some additional improvements learned by experiments. Take half a bushel of nice unslacked lime, slack it with boiling water, cover it during the process to keep in the steam. Strain the liquid through a fine sieve or strainer and add to it a peck of salt, previously well dissolved in warm water; three lbs. of ground rice, boiled to a thin paste, and stirred to boiling hot; half a pound of powdered Spanish whiting, and a pound of clean glue, which has been previously dissolved by soaking it well, and then hanging it over a slow fire, in a small kettle within a large one filled with water. Add five gallons of hot water to the mixture, stir it well, and let it stand a few days covered from the dirt. It should be put on right hot; for this purpose it can be kept in a kettle on a portable furnace.—It is said that about a pint of this mixture will cover a square yard upon the outside of a house properly applied. Brushes more or less small may be used according to the neatness of the job required. It answers as well as oil paint for wood, brick or stone, and is cheaper. It retains its brilliancy for many years. There is nothing of the kind that will compare with it, either for inside or outside walls.

Coloring matter may be put in and made of any shade you like. Spanish brown stirred in will make a pink, more or less deep according to the quantity. A delicate tinge of this is very pretty for inside walls. Finely pulverized common clay, well mixed with Spanish brown makes a reddish stone color. Yellow-oehre stirred in makes yellow wash, but chrome goes farther, and makes a color generally esteemed prettier. In all these cases the richness of the shades of course is determined by the quantity of coloring used. It is difficult to make a rule because tastes are different; it would be best to try experiments on a shingle and let it tell you. We have been told that green must not be mixed with lime: The lime destroys the color, and the color has an effect on the whitewash, which makes it crack and peel. When walls have been fully soaked and you wish to have them a clean white, it is well to squeeze indigo plentifully through into the water you use, before it is stirred in the whole mixture. If a larger quantity than five gallons be wanted, the same proportion should be observed.

persevere and your endeavors will succeed.

STATE FAIRS elsewhere seem to be well attended. There were 50,000 persons present at the Connecticut, and a like number at the Illinois Fair, the other day.

SCIENTIFIC INFORMATION FOR THE WHOLE WORLD.

CHAPMAN'S GREAT DISCOVERY.

THE MONTHLY RAINBOW, or Chapman's Pre-calculations for elementary changes, based upon the discovery of the physical laws and harmony of electrical action pervading the solar system, as involved in the differing effects of light modified (or polarized) by differing angles of reflection on a large scale. This important discovery of the laws of nature which regulate the changes of the elements, constitutes a subject of magnitude and importance, perhaps unsurpassed by any other on the pages of historic record. The surprising accuracy with which Dr. Chapman is enabled to pre-calculate all elementary changes predisposing more to storms, earthquakes, auroras, &c., and also atmospheric changes within the hour for each day, months in the future, and the physical effects on the health, feelings and humors of mankind, must be admitted by all unprejudiced minds to be of incalculable advantage to the whole human race.

In presenting the RAINBOW to the public, we do not claim it to be an infallible weather guide. But this much we do claim, that it will be found to be correct to the letter, eight times out of every ten. All we ask is a candid examination. Terms of RAINBOW, \$1 per year, in advance, 50 cents for six months.

CHAPMAN'S PRINCIPLES, or NATURE'S FIRST PRINCIPLES, cloth binding, 72mo., 200 pages.—Volume first contains a full explanation of the discovery to which Dr. Chapman has devoted the last nine years of close observation. Published every six months, (March, and September,) price \$1 per volume, for which it will be sent, post paid, to any part of the country. First volume now ready.

Address

CAMPBELL & Co.,

No. 73 South Fourth St. above Walnut, Philada.

Agents wanted in every county.

HENRY PORTER'S

SHOE AND BOOT ESTABLISHMENT.

THE SUBSCRIBER has, and will continue to keep on hand, at his stand on the West Side of Fayetteville Street, an extensive and choice assortment of

BOOTS AND SHOES.

suitable for Ladies, Misses, Gentlemen, Boys and Servants, of every description and for all seasons to which he respectfully invites the attention of purchasers, promising a good article and good terms as can be afforded anywhere in this Market.

He also keeps first-rate workmen, and will mend or make Shoes or Boots to order, in the very best style.

He will likewise furnish the trade with materials at moderate rates. Everything warranted.

HENRY PORTER.

Raleigh, Dec. 1855

4-34.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Portable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4-1f

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY,

THE BOOKSELLER.

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF Theological, Law, Medical, Classical, Miscellaneous

AND SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY.

BLANK BOOKS

Of every description, including Receipts for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW receiving a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of GENTS' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes them objects for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco.

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring.

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-1f

CONTENTS OF JANUARY NO. 1856.

Apples as Food, 296; Apples, keeping, 303; Animals, kept quiet, 303; Agricultural Society in Rockingham, 310; Broom Corn, 302; Barn Yards, water in 296; Building Material, new, 302; Bean, Yaddle Soup, 305; Cultivator, Southern, 309; — Carolina, Western, &c., 306; Cement, new, 303; Clay or Marl, 303; Clubs Farmers', 309; Dry Weather, Improve, 295; European Plows and Plowing, 295; Farmers of N. C. Improve, 310; Feeding out Roots, 305; Fair, Cumberland, 289; Fairs, County, 307; Fairs, Generally, 290; Farmers' Future, 292; Food, variety of, 295; Farms, Small, 301; Fruit Trees, new mode of raising, 303; Gnam for Insects, 292, 305; Granville Ag. Socy, Officers of, 304; Grape Vines, Bleeding, 312; — Hog-killing in olden time, 301; Insects, destructive, 301; Information wanted from Secretaries of Agricultural Societies, 306; January, 311; Large yield, 310; Lumber for Texas, 309; Metals to prevent rusting, 313; Manure, Stable, 292; Milk, facts about, 303; Mapping, by P. S., 313; N. Y. State Society, Transactions of 311; Naukin or Shanghai Sheep, 301; Nothing New, 308; New Year, 314; New Year, Reflections for, 315; Patent Office Reports, 311; Peach Trees, 296; Plowing Deep, 291; Point Valuable, 302; Potatoes, Seedling, 293; Ridding up ground, for winter, 294; Root Crops, 311; Sugar Cane, Soil siber for, 312; Sugar beets, raising, 296; Teeth, insensible to pain, 294; Ticks on Sheep, 292; Tennessee, 312; Union Fair Premiums, 297; Vegetables, salt cooking, 303; Wine, domestic, 294; Weevil in Wheat, 311; Wright on Grasses, 317; Whitewash, 319.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. I. RALEIGH, FEBRUARY, 1856. NO. XI.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A-YEAR, in advance, or \$1.50 if not paid until the end of the year.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

CHEMISTRY OF MANURES.—ON FALLOW.

THERE is no need to remind you that the practice of fallowing is of the greatest antiquity, for it will be remembered by most of you that the Jews were commanded to allow the land to rest every seventh year. The Romans were the first to introduce it into this country; neither was fallowing then, nor is it now, confined to any particular class of soils, it being as common on light as on heavy land. His Majesty, King George III, was in the habit of saying, "that the ground, like man, was never intended to be idle."

Now, it appears to me, that the fallowing of light soils is perfectly unnecessary. (This, you must understand, I advance only as the rule—I am perfectly aware that there may be a few exceptions to it, but these occur only on strong undrained clays.) I do not allude to green crop fallowing—but naked fallows, for on light soils there is no impediment to the successive growth of crops with proper management, and as regards weeds they can readily be brought under subjection; but this is not so easily to be accomplished on clayey soils. The question, then, which naturally arises is, to what kinds of land is

fallowing best adapted? But previous to entering upon this part of the subject, it might be as well briefly to state the nature of fallowing, both in a mechanical as well as a chemical point of view.

In the first place, then, the effect of fallows, or the period during which land is allowed to remain at rest, is to disintegrate the soil, or bring it into a finer state of division; and, on account of its being thus rendered more porous, this causes it to be more susceptible of the influence of the atmosphere. By means of the action of the atmosphere and the decomposing effects of the sun's rays, certain substances in the soil are made soluble which were previously locked up amongst its mineral constituents, such as the silicates of alumina, potash, soda, ammonia, &c. This is accomplished by the action of carbonic acid and oxygen in the air, aided also by the presence of moisture and rain water, which agencies are made considerable more powerful by the direct rays of the sun. There is much strong clay land scattered all over the country, which I think cannot be successfully cultivated without an intervening fallow. I say this, however, advisedly, because I am quite aware of what Mr. Meehi has done he having proved beyond all doubt, that where expense is not regarded, bare fallows are utterly unnecessary; and this, too, is consistent with all my preconceived notions of the nature and properties of the soil. On poor sand land fallow is positively injurious, because it tends to diminish what little organic matter it already possesses; but on the contrary, on heavy soils the improvement is mechanical as well as chemical. It will be noticed that proper exposure to the air and the influence of the sun's

rays, are the main features of the process of fallowing. The carbonic acid and oxygen brought down by the rain, exert a powerful effect upon the insoluble alkalies which are locked up in the clays. Inert vegetable matter is also so acted upon as not only to afford carbonic acid and ammonia, but to yield a supply of those salts which are contained therein.

The addition of lime, after the land has been well drained, is a powerful auxiliary in the process of fallowing on clay lands, and when largely employed at first, is the main agent in putting a stop to the necessity of using the naked fallow afterwards. So, then, in bringing stiff clays into cultivation, a naked fallow once in eight years, or even less, may be advisable; but when once the soil has been brought into good heart, a naked fallow is the worst possible mode of agriculture, provided the land can be kept clean without it; a naked fallow ought, therefore, to be looked upon as a necessary evil, and should be borne with as such, and only then upon heavy clays.

It may be asked what are the principal means by which fallowing may be superseded? This may be accomplished by deep drainage, by liming, by the burning of clays, or, where the land is perfectly clean, by a green fallow crop.

Thorough draining will rid the soil of all aquatic weeds, and render it more porous, consequently more accessible to the influences of the atmosphere.

Lime will be instrumental in dissolving the alkaline earths and silicates. The silicates of alumina, &c., contained in clays, might be digested in acid, (such as oil of vitriol mixed with a little water) for several weeks, without producing any appreciable results: but after these earths have been mixed with lime and then digested in an acid solution, they will assume the consistence of a thick transparent jelly, which is owing to the silica being dissolved. The same process is carried on, but only in much slower degree, by the carbonic acid of the atmosphere, which gradually prepares these mineral constituents of the soil for their reception by the spongioles of plants.

The burning of clays not only brings the land into a better state of division, but the process of burning renders the alkaline silicates more easily acted upon by the air, reducing them more rapidly into a soluble condition, and fitting them for supplying to plants the necessary constituents of their growth.—It must be borne in mind that all soils ought to be accessible to the action of air—oxygen and carbonic acid—so as to favor the development of the roots of plants. Stiff clays are wanting in these properties, but this may be imparted to them by a partial calcination.

With regard to root crops, these may always be adopted where the land is in good heart and fit for

their reception; for, during the growth of these fallow crops, by frequent hoeing and loosening the soil, pretty nearly the same results may be obtained as by allowing the land to lie idle; besides, the quantity of vegetable matter in a soil is considerably increased by green cropping—thereby leaving it in a far better condition for the production of a subsequent grain crop. It is true that the green crops oppose to a certain extent so complete a decomposition of the soil as when a naked fallow is used; but this deficiency may easily be supplied by artificial means, and the advantages of the increased supply of vegetable food in the shape of manure, of the stems and leaves of the plants and the fibers of their roots, will more than compensate for the proportionate decrease of inorganic matter which would have been brought into action by the naked fallow, which result may readily be obtained by a slight dressing of lime. Thus you will perceive that there are various means which may be adopted, either singly or collectively, as the case may be, for doing away with the practice of fallowing in the generality of instances, which will tend not only to a more successful cultivation of the soil, but at the same time will add considerably to the interests of the farmer in a pecuniary point of view. I remain your obedient servant,

SAML. PARR.

The above excellent article is from the *Farmer's Magazine*; and for the purposes of the English farmers, with their practice, it is quite full. For us, however, it may be proper to add, that so great is the advantage in our climate from a mulch, that our system of fallow should always include the advantages to be derived from mulching. The object of fallowing, as above set forth, is to enable such soils as will give up, but slowly, the mineral constituents pent up within their particles, time to avail of the action of such natural laws as continue the process of debridation of particles, so as to insure an accumulation of those soluble constituents required by plants. Thus a pebbly soil, its particles being coarse, presents a less amount of surface-soil than one more comminuted; and therefore such soils would give good crops less frequently, because they are slower in supplying the constituents of plants; and it is for this reason that they are suffered occasionally to lie in green or bare fallow. Such a soil, however, when covered by an old rail or plank during the winter season, will be found in the spring to be more fertile than parts not so covered; and this gives us the hint that the whole surface, as far as practicable, should be so conditioned. This may be readily brought about in a variety of ways. Thus strap-leaf turnip seed may be sown upon it so late in the season as not to perfect the turnips, but still to cover the ground with their extended leaves, which

will keep their vitality all winter, and thus mulch the ground. If ploughed under in the spring, we then not only have had all the advantages accruing from a naked fallow, but all those consequent upon the action of the leaves as a mulch; in addition to which, the inorganic as well as the organic matter incorporated in the turnips and leaves, have been progressed by such preparation and rendered fitter pabulum for any succeeding crop. Those who have had analyses of their soils, and have observed the quantity of soluble organic and inorganic matter, find those quantities increased after such a fallow. And when the constituents of which the soil is most deficient are not needed by the current crop grown upon it, then a proper succession of crops is the true rest of the soil; for if such deficient material be not among those needed by the growing crop, its liberation from its prison-house—the particle of soil—will go on as rapidly as it in fallow, while that portion of organic matter contained in the roots which will be eventually left in the soil, and which organic matter is received from the atmosphere, will be added to the carbonaceous composition of the soil, and thus it will be permanently improved.—Ed. *Working Farmer*.

DEEP LAND CULTURE.

We are glad to find in the *Journal of Agriculture and the Transactions of the Highland and Agricultural Society of Scotland*, a long and thorough article on the subject of Deep Land-Culture, and there denominated “Yester Deep Land-Culture,” and principally devoted to an account of the operations of the Marquis of Tweeddale, who has been engaged, for several years, in carrying on extensive agriculture himself on certain parts of his property in the East Lothian, which improvements were commenced at Yester, in 1832. Before the improvements in question were commenced, 228 acres were valued at a rental of seven shillings per acre: 235 at ten shillings per acre, and the rest at about fourteen shillings per acre. So inferior was soil at Yester, (the best portion of the lands as regarded by the neighboring farmers) that one of them was heard facetiously to remark, that he hoped the Marquis of Tweeddale would always keep Yester Mains in his own hands, as it would give him a very good idea of what his land was worth. The result of the Marquis’ experiments, however, which seems to have included an expense of five pounds nine shillings and sixpence the imperial acre—has been to materially increase his income, as the lands now rent readily, at *fifty shillings per acre*.

We find nothing in this long article which does not entirely agree with the statements made in our Vols. I. and II., giving the results of experiments in

underdraining and sub-soil plowing, by ourselves and others. For the benefit of our new subscribers, we shall recapitulate our views and experience in relation to deep tillage.

For twenty years past we have been the advocate of deep and sub-soil plowing, under-draining, etc.; and we do not, at this time, believe that farms can be worked at full and remunerative profit, without the use of the sub-soil plow. Nor do we believe that this implement can be used to a full advantage, on many soils, until after they have been thoroughly under-drained. When we introduced the first sub-soil plow on our farms in New Jersey, there was not as many plows in the State—say ten years since—as there are now foundries for casting them. Their figure at that time was such as to require heavy teams for their propulsion. They now, however, may be used with less team than an ordinary surface-plow, when disintegrating the soil to the depth of only eight inches; and, therefore, there is no longer any excuse for avoiding their use.

We claim that the same principles made use of by Nature, in the original formation of soils by the *debris* of rocks, should be availed of for the continued comminution of the particles of soils; for we may view every pebble stone and grain of sand, as requiring the same operation of Nature’s laws to cause it to give up the inorganic constituents of plants, pent up within itself, as did the original rock from which it came.

We also claim that the crops distinctly depend upon the quantity of surface of particles presented for atmospheric influences, and so conditioned as to be readily permeated by roots in search of their constituents. It is well known that some pebble soils, which in practice are barren, have the same composition as the finely divided soils of the Miami Valley, and which last are of most fertile character. It is evident, therefore, that the mechanical division of the soil, and its presentation to the continuance of the action of Nature’s laws, is a question of degree, as applied to its capability of furnishing the pabulum for crops; and, therefore, the deepest cultivation, and the greatest amount of atmosphere, with a proper degree of humidity, which can be brought in contact with the surface of the greatest number of particles, is that which must prove the most profitable. And it is a mere question of cost, as to the greatest depth to which these conditions may be furnished to the soil.

The use of under-drains, then, is not merely to rid the soil of excess of water; for its temperature will depend in part upon the quantity of air which shall pass through it. Under-drains, therefore, are useful to the soil, by enabling air to circulate between its particles; and it is for this reason that

under-drained soils, so arranged that every alternate drain shall be opened at both ends to the atmosphere, will present the anomaly of alternate good and comparatively indifferent crops; and in the course of this article we shall have occasion to quote some instances of this kind.

We would lay down, then, the following self-evident propositions:

1. The removal of excess of water by under-draining, permits the free access of air.
2. The chemical changes necessary to liberate the inorganic constituents pent up in the particles of soil, go on more rapidly.
3. Those portions of the soil known as alumina and carbon, receive larger amounts of ammonia and carbonic acid from rains, dews and atmosphere, than in soils not so prepared.
4. Roots will permeate such soils to greater distances, and hence come in contact with larger amounts of such constituents as are required for their food, than if the soil was not so prepared.
5. The temperature of the soil is materially elevated by under-draining and sub-soil plowing, thus giving a longer season, and rendering the soil capable of earlier plowing.
6. The carbonaceous portions of the soil become increased by the decay of a greater amount of roots.
7. Less manure is required to fertilize soils so prepared.
8. Thoroughly prepared soils never suffer from drouth.
9. A less amount of seed will produce a maximum crop.
10. Sub-soiled meadows never run out.
11. Deeply disintegrated soils become darker in color.
12. A large class of weeds are destroyed by a thorough deepening of the soil, including all those which frequently occur in sour and wet soils.
13. Under-drained and sub-soiled lands do not compact after plowing, from rains, to the extent that is noticeable with ordinary plowing only.
14. The increased amount of crops consequent upon such preparation, will enable the farmer to pay ten per cent. per annum, or more, upon the cost of the under-drained, from the increased ratio of crops, beyond the expenses of their production.
15. Soils so prepared will improve more rapidly than any others, even beyond the improvement of the first few years, which goes to reimburse the original expense, and thus, in perpetuity, increase the value of the land, more than the whole cost of under-draining.
16. The net profit of twenty consecutive years, by under-draining, is double—the excess crops leav-

ing no portion of the expenses to bear upon them, other than in their harvest, from increased quantity.

THE FIRST PROPOSITION.—The removal of the excess of water by under-draining, permits the free access of air, is self-evident; for while the space between the particles is occupied by water, even the heavier portions of the atmosphere—such as carbonic acid—held in it, cannot enter the soil, but after its removal, the atmosphere not only is depositing its heavier portions in the soil, but the current of air which must be continually passing through under-drains is leaking through the tile, and this rising up through the soil; for if both ends of a drain be open, the current of air through the drain is at all times sufficient to blow out a candle at the more elevated end, and thus a change of atmosphere between the particles must be continually taking place.

SECOND—The chemical changes necessary to liberate the inorganic constituents pent up in the particles of soil, go on more rapidly.

It is evident, first, that by the presence of atmosphere, and a proper degree of humidity, roots and other organic matters in the soil, will the more rapidly undergo decomposition. This has evidence in the fact that every fence post decays most rapidly at its earth-collar, or where the moisture of the soil and the atmosphere, by their combined efforts, may cause its decay. And thus we often find a post rotted off at the surface of the soil, while its lower end has remained comparatively sound. These conditions exist in all parts of properly under-drained soil, from the fact that both air and moisture are at all times present among the particles. The changes in the inorganic portions are also going on with redoubled activity, for as fast as oxydation of surface takes place, and they become soluble in water, these soluble portions are carried, by the activity of capillary attraction, etc., to new surfaces. And these chemical changes can only occur by such transpositions, giving rise to new formations. Thus a felspar particle yields up a portion of potash, which may be removed to a particle of silice, thus forming the soluble silicate of potash, so valuable in coating and giving strength to straw. Acids are brought in contact with alkalis, and all soluble inorganic materials are presented to each other, so as to render the conditions favorable for the different required chemical changes.

THIRD.—Those portions of the soil known as alumina and carbon, receive larger amounts of ammonia and carbonic acid from rains, dews, and atmosphere, than in soils not so prepared.

Our readers are well aware that both alumina and carbon have the power to abstract ammonia from the atmosphere, and to retain it until consumed by plants, nor will it be removed from the carbon and

alumina by water passing down over their particles. The quantity of ammonia then, abstracted from the atmosphere, must be in proportion to the quantity of atmosphere that may be brought in contact with these absorbing particles, which must be materially greater in well aerated soils, than in those that have been less thoroughly disturbed and divested of stagnant water. The dews and rains, also, while passing through the atmosphere, receive those gases which result from decompositions of all kinds on the earth's surface; and when they enter an under-drained soil, they readily pass down instead of running over the surface. In passing through the soil, they are robbed of these gases by the carbon, alumina, oxide of iron, and by such other ingredients as are capable of receiving and retaining them.

FOURTH.—Roots will permeate such soils to greater distances, and hence come in contact with larger amounts of such constituents as are required for their food, than if the soil was not so prepared.

The former propositions render it evident that a larger amount of food prepared for plant-use, does exist in a deeply-tilled soil properly aerated by under-drains, and the use of the sub-soil plow. It is also evident that the mechanical condition of such soils cannot be as compact as those suffused with water—in other words, that they are looser—therefore that the roots of plants can travel to greater distances without coming in contact with a cold sub-soil, which would disease their termini and prevent their increase. Practically, roots will travel in a soil loosened to a sufficient depth, to an average of thirty-four inches—while all fluids in passing through that depth of soil will be robbed, by the alumina and carbon, of all their manurial constituents. Practically, plants grown on under-drained and sub-soiled lands, have a greater number of termini to their roots; and are of greater length.

FIFTH.—The temperature of the soil is materially elevated by under-draining and sub-soil plowing, thus giving a longer season, and rendering the soil capable of earlier plowing.

Every observer is aware that the atmosphere, during the growing seasons of the year, is warmer than the soils, and therefore the larger the quantity of atmosphere that passes through the soil, the higher must be its temperature; and, in our former articles, proof will be found that in some instances the temperature of the soil has been raised ten degrees, as compared with adjacent soils not similarly treated. Dews and rains, also, during summer, are much warmer than the soil, and in passing through it part with that heat beneath the surface, instead of doing so while running over the surface, as in shallow-plowed land.

All the chemical changes which occur in the soil, which are increased as before described, give out heat, and this tends to elevate the temperature. The more rapid and constant decay of organic matter also tends to blacken the soil, and thus render it capable of receiving the sun's heat to a greater depth. The freezing of such soils will be found to occur to a less depth, than in shallow-plowed land; for when winter approaches, as at all other times, it contains no excess of water to be frozen; and during winter, the melting of snow and ice can pass down through the soil, and be delivered at the under-drains, instead of being frozen when occupying the spaces between the particles of the upper portions of the soil.

Soils not under-drained, are rendered cold by the evaporation of excess water from the surface. The rationale may be thus understood. If we wet our hair, and then fan it, the head will be cooled; for as the water becomes vapor, it takes present heat from the head, rendering it latent. If a bottle of water be surrounded by a wet towel, and placed in a draught of air, the evaporation from the towel will cool the water in the bottle. The same effect, and from the same causes, must occur from a surface-wet soil, where, as when under-drained, no excess of water remaining on the surface, the mass cannot be so cooled.

SIXTH.—The carbonaceous portions of the soil become increased by the decay of a greater amount of roots.

If we admit that large crops are raised, of course we have more roots as a consequence, and their decay must produce a larger amount of carbon. Practically, the soil becomes darker, and by analysis establishes the above fact.

SEVENTH.—Less manure is required to fertilize soils so prepared.

This must be evident, first, because the soil itself is undergoing more rapid chemical changes, and over a greater amount of surface, furnishing larger amounts of inorganic materials required by plants. It also, from its deep disintegration, becomes the storehouse of larger quantities of carbonic acid and ammonia received from the atmosphere, as well as from the decomposition of a larger amount of roots. And when other fertilizers are added, they become distributed over a greater amount of surface, and therefore a larger portion is retained, than when in shallow-plowed lands their gaseous products, after decomposition, are lost in the atmosphere.

EIGHTH.—Thoroughly prepared soils never suffer from drouth.

During drouth, when the surface-soils are dry, the atmosphere necessarily contains the missing portions of water; and whenever it comes in contact with a surface colder than itself, it deposits the water.—

Thus we find drops condensed on the outside of a cold pitcher; and thus we find tufts of grass growing luxuriantly where fence posts have been removed and the holes filled up with loose earth, even in the driest weather—for the large amount of atmosphere that is passing through under-drained and sub-soiled land, must come in contact with surfaces colder than itself, and there deposit the water.—When so deposited, it is always highly charged with those gases which are mixed with the atmosphere, and which are retained by the soil.

The Committee of the American Institute who visited our farm last year, during the nine weeks drouth, reported that our fences were a boundary to the drouth—that not a plant or spire of grass seemed to have suffered at all from the dry weather.

NINTH AND TENTH.—A less amount of seed will produce maximum crops. Sub-soiled meadows never run out.

Thin sowing is now common in England, on under-drained and deeply disintegrated soils. Thus a single kernel of wheat when sown in such soils, will throw out *tiller-roots*, so as to throw up plants covering the vacant spaces; and a few quarts of seed take the place of a bushel. But in shallow-plowed land this tillering will not take place to the same extent; for as soon as one root reaches the cold solid sub-soil, the tillering of the whole plant ceases, and it is for this reason that sub-soiled meadows never run out; for if the crown of a grass-root be abraded by the feed of cattle, it immediately renews itself by tillering, which would not be the case in shallow-plowed meadows.

ELEVENTH.—Deeply disintegrated soils become darker in color.

The rationale of this fact we have given in our explanation of No. 5.

TWELFTH.—A large class of weeds are destroyed by a thorough deepening of the soil, including all those which frequently occur in sour and wet soils.

As soils amend themselves by the natural progress consequent upon the uninterrupted application of Nature's laws, as in deeply disintegrated soils, they lose acidity, and thus refuse to sustain those weeds which are of acid character, while the absence of excess of moisture does not furnish the conditions which many valueless plants require for their germination. In addition to which, it may be said that soils properly prepared are so much more easily tilled during the progress of crops, that the greater industry removes all weeds of whatever character they may be.

THIRTEENTH.—Under-drained and sub-soiled lands do not compact after plowing, from rains, to the extent that is noticeable with ordinary plowing only.

If two barrels be filled with sand, the one lightly thrown in, and the other rammed after every shovel full, and the loose barrel then be flooded with water and filled up with sand to offset for the settling, it will be found to contain a larger amount of sand of the two; for when every particle is suffused with water, so that the entire surface is lubricated, they will settle to the closest fit, and become more solid than any mechanical force, without water, could give them. In under-drained soils, the excess of water being removed and new portions received, even during violent rains, can only compact the immediate surface, for the spaces between particles being all empty, water can pass down without any portion of the soil becoming suffused. In addition to this, all the surfaces being humid, the water can travel over them with greater rapidity than if dry. In passing water through dry soil, the particle has to become wetted before it will pass the next portion of water; and thus under-drained and sub-soiled lands do not compact, except at their immediate surface, and there to a much less extent than shallow-plowed lands, over which the rains pass.

FOURTEENTH.—The increased amount of crops consequent upon such preparation, will enable the farmer to pay ten per cent. per annum, or more, upon the cost of the under-drains, from the increased ratio of crops, beyond the expenses of their production.

This is a question which has been practically settled by every farmer who has tried the experiment; and in England where the Government will advance to any farmer the necessary amount to under-drain his land, taking a mortgage for the amount, practice has proved that the increased crop consequent upon under-draining, has, in every case, enabled the farmer to pay up the interest, and five per cent. or more of the principal, each year, leaving his farm increased in value at the end of the term, more than equal to the amount of the mortgage, while the nation at large is enriched, not only to the amount of the mortgage and interest paid, but by an increased interest for all time. Private companies, with large capitals, are now established in England, for loaning money on under-drain mortgages; and even the owners of hereditary estates are permitted to mortgage for the purpose of under-draining only, practice having proved that the value of the estate is always increased equal to the expense of under-draining.

FIFTEENTH.—Soils so prepared will improve more rapidly than any others, even beyond the improvement of the first few years, which goes to reimburse the original expense, and thus, in perpetuity, increases the value of the land, more than the whole cost of under-draining.

This will be readily understood, from the fact that the organic matter must be continually on the increase, from the decomposition of increased quantities of roots in the soil, as a natural consequence of increased crops, while the preparation of the inorganic integrants of the soil for plant use, must bear a similar ratio; for upon an increase of carbon must be an increase of permeability to atmosphere, with superior conditions for all required chemical changes. And the experience of the Yester experimenters and others, clearly shows, that with an equal amount of fertilizing material added to that which would not improve shallow-plowed, the under-drained and sub-soiled portions are continually benefitting by increased capacity.

SIXTEENTH.—The net profit of twenty consecutive years, by under-draining, is double—the excess crops leaving no portion of the expenses to bear upon them, other than in their harvest, from increased quantity.

This is a practical question, which has been clearly settled by all those who have owned farms drained twenty years ago. It should be borne in mind that but few crops give a net profit to the grower, of more than twenty per cent. of their gross amount; therefore, if the crop be increased twenty per cent., the profit is doubled; and we know of many instances where the increase has been fifty per cent., and in some cases one hundred per cent.

All the positions we have assumed in the above, will be found practically proved by reference to the articles referred to at the end of this paper. The experiments of Mr. Webb, of Wilmington, Delaware; James Campbell, Weston, New Jersey; Sinclairutherland, Dalmore Farm, Rothshire; the Hampshire Gardens; Collett's Ditch in the turnip field; Mark Beardsley's wheat experiment; E. S. Salisbury's experiment; Mr. Hoskins; J. Marshal Paul, M. S. S. experiment in draining the Great Meadow in Sussex County, New Jersey; John Johnson's Farm in Fayette; Henry W. Delavan's experiments; Linus Hope, of Detroit, Michigan, and the many others contained in the references below, all go to give practical evidence that we are not mistaken in the theory we have advanced.

The difficulties which a few years ago surrounded the practicability of under-draining, sub-soil plowing, and deep surface-plowing, no longer exist.—Main-tile are now made in all parts of the Union, and at moderate prices. The machines themselves making these tile, can be purchased for about one hundred dollars, and wherever a clay bank can be found, they may be put in operation, manufacturing many thousand per day. Books have been published, giving full and explicit instructions for under-draining; and in many localities the water discharg-

ed from one field may be used to irrigate another, which, if also under-drained, may be materially benefitted by such practice, particularly when in a permanent meadow. By the use of water rams, a portion of the water may be elevated for the use of stables, etc.

The old style sub-soil plow, which requires two or more yoke of oxen to propel it, has been replaced by the new lifting sub-soil plow, which may be run to any required depth, with a single pair of horses, mules, or oxen; and we have yet to find the soil where this implement cannot be used. Those who object to elevating the sub-soil, or in localities where the sub-soil is of a kind that should not be raised—which localities, by the by, are few and far between—may, with the lifting plow, disintegrate the sub-soil in its place, without elevating it all. Those also who object to turning over the surface-soil to any greater depth than they find a black mold, may disintegrate the sub-soil in place, and after such disturbance they will soon find the depth of their surface-soil materially increased, so as to warrant them in increasing their plowing, without a departure from their rule of being guided in the depth of plowing by the color of the soil. They may even disintegrate an old pasture without turning over the sod; for as this plow is a gradual inclined plane of only one and a half inches rise, and alike on both its sides it elevates the soil for that distance, leaving it all free above its sole, like the soil above a *mole track*, without abrading the roots of the grass; and the cut through which the upright knives of the plow travel, closing up behind it, leaves the whole surface of the field sub-soil, plowed, elevated one or two inches, and all in a softer condition of the soil than from ordinary plowing, while the surface grass remains undisturbed; each root, however, having the soil loosened about it, giving free entrance for air and moisture, so that the dead roots may decay; and those which are in a growing condition take on new vigor. One cut of this plow through the middle of an old pasture, will in ten days show a green strip, surpassing the rest of the field in verdure, and of about four feet wide.

Such a plow may follow an ordinary surface-plow, propelled by a separate team, with its beam lying in the bottom of the furrow made by the surface-plow, under-cutting the land side in its travel, and causing the furrow to be lifted during its passage along beneath it, so as to soften and divide it, and render the next surface-plow cut, capable of being performed with much less force. But this tool is of comparatively little use in soils requiring under-draining, as excess of water will soon settle the soil, however well disintegrated.

The new digging machine, known as Mapes' and Gibbs' Rotary Digger, will also perform this process of sub-soil plowing, at the same time that it disturbs and reverses the position of the surface, for the soil-lifter in front may be set at a depth of nineteen inches, while the digger which follows, may be set so as to dig and render pulverulent the soil, for any depth, from one inch to nineteen. The farmer who should desire his soil rendered fine to a depth of eight inches, and the sub-soil to be disturbed, without being elevated, to the depth of nineteen inches, may do both at one time with this machine, with a single yoke of oxen, leaving the surface-soil as finely divided as if dug with a garden fork or spade, and much more finely divided than it would be, after five surface plowings. The machine is now in operation at our farm, where it may be seen at any time.—*Working Farmer.*

USE OF LONG MANURE IN THE FALL.

MANY farmers are so positioned, as to have large amounts of long manures on hand in the fall, who have not yet constructed proper sheds for composting, or have not the proper materials prepared to be mixed with such manures, so as to fit them for early spring use in a properly comminuted state. Many also have teams at leisure, and fields which might be plowed and sub-soiled this fall. Such may make use of long manures, with profit, and particularly on clayey soils of tenacious character. To such soils manure may be applied with propriety in its long state, by being plowed deeply under, or in the manner described in our article headed "Winter Treatment of Clayey Soils." If plowed deeply under at this time, all those gases which would otherwise be lost in an open barn-yard, may be received and retained by the soil. The gradual decay of the manure when deeply located in the soil, forms spaces for the admission of atmosphere. The parasitic plants which now occupy the surface, all being reversed in position, and coming in contact with the manure, may be killed while the plowing of the soil will enable the winter's frost to render it more kindly for spring working. Indeed, any heavy loam, containing fair amounts of carbon and alumina, may be fall-plowed, covering long manure with profit; for if it be reversed to a sufficient depth, there is no fear that any portion will be lost, while the free condition of the soil will fit it for the reception of fertilizing gases during winter, and render it capable of retaining more ammonia, which will be received from the late fall and spring rains. Indeed, if there were no other

object than to lessen the amount of work to be done in the spring, that, alone, would authorize the use of long manure at this time, if accompanied by deep plowing; for in the spring much labor may be saved with lands so prepared, which require mere surface-plowing to render them then fit for receiving crops. Manures so prepared are not to be carted out in the spring, and therefore the spring work may be more readily performed.

Sandy soils, particularly those of a blowey character, should not be fall-plowed. On the contrary, they should be left as flat as possible, and in some cases rolled, so as to give them greater tenacity for spring use. Those who have followed our advice of last year, sowing oats sparsely, on fallow lands during September and October, will find them well mulched at Christmas. The frosts are sure to kill the oats, leaving the ground covered all winter, and when plowed under in early spring, a considerable amount of organic matter will be added to the soil, besides leaving it in that free condition always consequent upon the partial growth of an oat crop. Many who can plow those lands early, which are intended for spring use, may advantage by sowing turnip seed, notwithstanding the fact, that it may be too late for any of the turnips to arrive at maturity. They are so tenacious of life, that the leaves continue to mulch the ground during winter, while the spring plowing will render them useful as green manure when plowed under. The cost of turnip seed is so small that this method should be more often availed of.

Working Farmer.

IN Congo the negroes take their wives for a year on trial; if at the end of that time they are satisfied the wedding is celebrated with a feast. The missionaries tried to abolish this custom, without success; the mothers declaring that they would not risk the happiness of their daughters by urging them to an indissoluble union with persons with whose habits and tempers they are unacquainted.

ORIGIN OF VEGETABLES.—Asia has given to hemp, the cherry, the peach, the French bean, the onion, rhubarb, mint, the mulberry, the citron, the lime, the orange, the chestnut, the pine of Siberia, the pine of Jerusalem, the plane-tree of the East, the aloe, the rose of Provençe, the mallow rose, the cypress, &c. Grain and buckwheat we get from the Levant, and the olive from Africa. Europe has borrowed from America the potato, the maize, tobacco, the banana, the strawberry, the medlar tree, and a hundred other trees, fruits, plants and flowers.—*Farmers' Journal.*

VEGETABLES.

Artichoke.—Sow early in the spring, in rows three inches apart, or plant suckers.

Asparagus.—Sow in April, in good rich soil.

BEANS. *English Dwarfs*.—Plant as early in the spring as the ground will work.

Kidney Dwarfs.—Plant from end of April to about 20th August.

Pole, or Running.—Plant beginning of May, and at intervals through the season.

Beets.—Sow in drills, from early in the spring till the middle of summer. Leave the plant 6 to 8 inches apart in the drills.

Borecole is an excellent green. Sow in fall, either broadcast or in drills, as for winter Spinach.

Brussels Sprouts are cultivated for the small heads which are attached to the stem. Sow in the middle of spring, and treat as winter cabbage.

Brocoli produces heads like Cauliflower. Sow in seed bed about the middle of spring. Transplant in rich ground when 8 or 12 inches high, and treat as winter cabbage.

Cabbage.—For early cabbage, sow in Autumn, in seed beds. Protect during winter; transplant early in the spring. For late cabbage, sow in seed bed, middle of spring. Transplant early in summer.

Cardoon is much used for salads, soups, and stews. Treated much like celery.

Cauliflower.—Sow, for early, in seed beds, in Autumn: protect from frost, in cold frames, and transplant in rich ground after frost ceases. For late, manage as Brocoli.

Carrots should be sown early in the spring, in deep-dug and well-manured ground, in drills 12 or 18 inches apart.

Celery should be sown early in the spring, in light rich moist soil. Transplant in trenches, highly manured, when about 6 inches high.—Blanch by earthing up as they advance in growth.

Chervil.—A small salad. Sow early in the spring, and after heat of summer.

Cress.—Used as a salad. Sow very thick in shallow drills, at intervals through the season.

Corn Salad.—Used as a salad during the winter and spring. Sow thick, in drills, about 1st of September, and cover with straw on the approach of cold.

Cucumbers should be planted first week in May, in hills 4 feet apart; prepare the ground by incorporating a shovelfull of rotten dung in each hill.

Endive.—Sow last of spring to middle of summer, in shallow drills.

Egg-Plant.—Sow in hot-beds early in the spring; transplant in rich warm ground late in the spring, about 30 inches apart. Egg-plant seed will not vegetate freely without a substantial heat.

Lettuce should be sown in seed bed, in the middle of September: protect the plants through the winter, and early in the spring transplant in rich ground; or sow in hot-beds in March, and at intervals throughout the season.

Melon.—Plant in hills, in light sandy earth, about 1st week in May.

Mushroom Spawn should be planted in hot-beds of dung, covered with earth.

Mustard.—Sown like Cress, and used for a salad.

Nasturtium.—Sow in May. The flowers and young leaves are used as a salad; the seed-pods, with foot-stalk, are gathered whilst green, and pickled as a substitute for capers.

Okra or Gombo, is one of the best of vegetables. Plant in May. The seed should be sown thick, as it is liable to rot in the ground. Very rich ground is required.

Onions should be sown in drills early in the spring, in rich ground, thin, to stand 2 or 3 inches apart.

Parsley should be sown early in the spring.—Soak in warm water before sowing.

Parsnip.—Sow in drills 18 inches apart, in good and deep-dug ground, early in the spring.

Peas.—The best soil for peas is a light loam.—The early sorts require rich ground. Sow in drills as early in the spring as the ground will work.

Pepper.—Sow late in spring, in drills, on a warm border; or in a frame or hot-bed, in March: set out plants 18 inches apart.

Pumpkin.—The Mammoth Pumpkin has been grown to the enormous weight of 225 lbs. Plant early in May, in rich soil, in hills, 8 to 10 feet apart each way.

Radish.—The early kinds should be sown as soon as the ground can be worked, in a sheltered situation.

Rhubarb should be sown in autumn or early in the spring: when in the latter, transplant in the ensuing spring to desired situation. The stems are used for tarts, and are fit for use before green fruit can be obtained, being a very desirable substitute.

Salsify, or Vegetable Oyster should be sown during April. The roots boiled, made into cakes.

with paste, and fried like oysters, much resemble them.

Spinach should be sown as soon as the ground can be worked. The soil cannot be too rich for *Spinach*.

Squash.—Cultivate same as *Cucumber*.

Tomato.—Sow in hills 3 feet apart, on a warm border, early in the spring. As the plants advance in growth, give them support.

Turnip.—For summer use sow early in the spring. For main crops sow close of summer.—The *Ruta Baga* requires more time to mature, and should be sown at mid-summer.

Aromatic and Sweet Herbs.—Anise, Brazil (sweet) Caraway, Coriander, *Fennel, *Lavender, Marygold Pot, Marjoram (sweet,) *Sage, Summer Savory, *Winter Savory, *Thyme, *Mint, *Rosemary, Dill.

Those marked with a * are perennial, and when once obtained may be preserved for years. The others are annuals.

HORTICULTURE.

BY HENRY A. DREER.

FLOWERS.

General Directions for their Cultivation

THE Flower Garden has always been the object of admiration: its refinement and delicacy have never been questioned, while its proper cultivation and attention are universally considered as evidences of taste and intellect.

Soil.—The first requisite to ensure the healthy growth of flowers, is soil. That most suited to the cultivation of garden flowers, is a rich mellow loam, which should be well manured, and pulverized late in the fall, or as early as possible in the spring. When ground is of a hard and clayey nature, the addition of sand will tend to render it less adhesive, and thus enable your tender varieties to strike their roots deep in the earth when they might otherwise perish with drought. The garden should have a regular supply of manure every fall.

Annual seeds may be sown from the first of April to the first of June, with variations of success. Those sown earliest, flower sooner and more profusely. Sow either in small beds or in drills from one-fourth to one inch in depth, according to the size of the seed. In a month to six weeks they will be ready to transplant. Be careful to do this during cloudy and rainy weather.—Remove your plants carefully: set the large flow-

ering kinds in the rear, the smaller in front.—Above all things, be careful not to crowd them, as one healthy plant is more beautiful in a garden than fifty sickly and attenuated. Tie your taller-growing kinds to painted rods: this gives an air of neatness, indispensable in a garden. If the weather, at the time of transplanting, is dry and warm, water them well for a week, and keep them entirely shaded from the sun. Do not set all out at once, but from time to time, lest a hot season should prematurely arrive. Many tender annuals that do not vegetate freely in the open ground, and which, after vegetation, a slight chill might destroy, may be brought forward in the following manner:

Cultivators desirous of obtaining an early bloom, may commence by sowing their seeds early in March, in pots or boxes of earth in the house, giving them as much sun as possible during the warmth of the day, and protecting them from the influence of a chill during night. This operation must, however, be performed with great care, to scarcely cover the more delicate kinds, while the stronger-growing may be sown a quarter of an inch in depth. A very delicate watering-pot, which suffers the water to fall like a shower of dew over the earth without washing away the most delicate seed, should be used. Give only a sufficient quantity of water; the greatest fault with the inexperienced is their propensity to drown every plant, which is equally injurious with depriving the plants entirely of sustenance. Preserve each kind distinctly labelled.

However, the most proper method, and that most generally practised by families having large gardens, is to "throw up" a small hot-bed, in which the pots containing seed may be plunged to their rims, or sown in shallow drills on earth previously placed over the manure, and should then be labelled to prevent mistake. The Cyprus Vine, Scarlet Morning Glory, and other species of the *Convolvaceæ*, should be soaked a few hours in warm water before being placed in the ground.—They will then vegetate much earlier and more regularly, and will blossom sooner. Many varieties will vegetate much sooner by covering them with a hand-glass, which should be taken off shortly after their appearance above ground, lest they should be rendered weak and sickly by confinement.

Cover the bed up carefully at night, for fear of sudden cold chilling the plants. Give them air by raising the sash on every fine day: this will ren-

der them more hardy, and capable of transplanting with less danger.

Lupins delight in a half-shady spot, and should never be transplanted: the seed may be sown early in March, in the open ground, and, when in city culture, kept moist after vegetation. Leaf or peat soil to mix will prove advantageous.

Hardy perennial and biennial seeds may be sown about the same time as the annuals. These do not blossom the first year; they may therefore be thinned out or removed from the beds in which they have been first planted; when their roots acquire sufficient strength, set out in the places they are to occupy for the succeeding year. They must be kept free from weeds, and the ground occasionally loosened to facilitate their growth. Biennials are generally raised from seed sown every year.—Many varieties of hardy annuals flower much larger and finer in the spring, if sown the preceding summer or fall, so as to vegetate previous to frost. Among these, the Dwarf Rocket Larkspur, Branching Larkspur, Strawberry Spinach, Evening Primrose, *Coreopsis tinctoria*, Sweet Williams, Pinks, all kinds of Poppies and Gillias.

There are many kinds that do not endure the frost, but which vegetate much earlier by the seeds passing the winter in the earth. Among these, the Marvel of Peru, Double Balsamine or Lady's Slipper, Cypress Vine, Euphorbias, Sweet Peas, *Convolvulus*, &c., stand pre-eminent. These, however, answer nearly as well by planting in March, April and May; and indeed, we have seen seeds of all the varieties, sown in June, flowering beautifully when the others were nearly ended. As soon as a flower begins to fade, pinch it off, and you will have several more equally as fine, to take its place, besides always having your plant neat. The strength given by the plant, to ripen seed, would then be thrown into the production of fresh flower buds.

Biennials are such as are of two years' duration; being sown one year, they flower, seed or fruit the next, and soon after decay. Sow the seeds during April, either in spots where they are to remain, or in beds by themselves, distinctly marked; to be transplanted to desired situations early in the fall. The following are among the most free-blooming and desirable sorts: Rose Campion, Holyhock, Snap Dragon, Canterbury Bells, Wall Flower, Foxglove, Pinks, Dwarf Evening Primrose, and their varieties.

Perennial herbaceous plants are those which die down to the root yearly; the roots of which remain many years. There is no class of plants more de-

serving general culture in the flower garden than perennials; for when once introduced they require but trifling attention: their increase is also of the most encouraging nature, being, in most varieties, effected by simply dividing or parting the roots in the autumn or spring. Herbaceous plants may be divided into three classes, viz:—Bulbous, as the Tulip, Hyacinth, and most Lilies; Tuberous, as the Dahlia and Peony; and Fibrous, as the Phlox and Perennial Aster. These may again be divided into hardy and tender. Among the bulbs, Tulips and Hyacinths are hardy; the Jacobean Lily, Tiger Flower (*Tigridia*), and *Gladiolus*, are tender. In tuberous roots, the Peony is hardy and the Dahlia tender; and in fibrous, most kinds are hardy, although in many cases they are killed by the winter and, by wet saturating their crowns, on which account it is necessary they should be partially covered in winter to protect them from being injured in this manner.

VINES.

Prune hardy kinds in the spring, by cutting out all dead or superfluous branches, regulating the remainder at an equal distance apart, when they are nailed with shreds of woollen or leather, or tied up neatly. In summer, prune so that the branches may not be too thickly crowded.

Propagate by taking off joints where they have rooted, and planting in the same manner and soil as the parent, in September. Cover the roots with fine earth, and keep moist. Some varieties, as the Honeysuckle and Clematis, are readily propagated by layers and cuttings. (See Plants.)

PLANTS.

Roses should be pruned in the spring: if allowed to grow straggling they neither thrive nor flower well. The rose always flowers from the young wood, and by being well trimmed more are thrown out. The rose is easily propagated in a deep rich soil. The Moss Rose will thrive on a clay bottom.

Althea, or Rose of Sharon, Snowballs, Honeysuckles, and most kinds of soft-wooded plants, may be propagated in the fall or spring, by sticking cuttings one foot long, half-way down, ten inches apart, in moist shady ground, well dug and pulverized, with a northern aspect. Press the ground hard round the cutting. To propagate by layers, bend the plant down, making an incision to the under part of the shoot or joint about half an inch; press perpendicularly two or three inches deep, and secure it in the ground, which must be well prepared.

Inoculate by taking well ripened buds, say in July or August; making an incision in the rind, taking care not to cut through the albumen nor into the wood; cut half an inch below and half an inch above the bud, with about half the wood and bark; press the rind gently back and insert the bud, carefully closing all around and binding with bars or other strings. The plants must be perfectly healthy.

Cold, late in the season, must be guarded against; the tender plants removed to their winter quarters, and those that remain out through the winter.—About the middle of November, protect all herbaceous plants by covering them on their crowns and roots with long manure and leaves, tying the branches up neatly, and covering with straw so as to turn off the rain and frost.

Insects may be removed by a strong decoction of tobacco juice, or one made of soft soap, sulphur and tobacco: sponge or bathe over three or four times. Keep the ground, fences, &c., clean about the flowers, by painting, whitewashing, &c.

In rooms, plants should enjoy as much of the light and sun from the windows as possible, be often turned, giving them a supply of fresh air in fine, soft weather; divest them of all dead leaves, and water them as nature indicates by the earth drying in the pots. Too much water sours and rots, too little dries up the plant, and breeds insects, &c. Plants in a growing state require more water.

Seeds should be saved from the plants in the healthiest state, and those first ripe are the best. Clean the seeds and preserve only those that are full and plump, throwing out those of a light quality.

Leaves are the principal organs of respiration, synonymous with the lungs of animals. Dead or decaying leaves are apt to breed insects.

Plants of all kinds should be so situated that the sun and air may have free access to any part of the leaves, fruit, and all parts as far as possible.

The *Dahlia* thrives best in a deep, rich, loamy soil, with the full benefit of sun and air. In winter, the roots should be cleared of decaying parts, dead stalks or tubers, and kept in a temperature a few degrees above freezing. For late flowers, plant late. Sow seed in May, in open grounds: but in a pot of light rich, sandy soil, as early as first April, and transplant about middle of May. Divide the roots and plant in March as soon as the eyes begin to push out, in pots or green-house, and transplant when the weather is settled warm.

FRUIT TREES.

Fruits, in a ripe and perfect state, are beneficial to health, if not eaten to excess.

Stunted trees never become vigorous, nor when too long crowded in nurseries.

In *Grafting*, 25 well placed are better than 100 grafts placed at random, and ten placed injudiciously will change the whole top of a tree in a few years, when 200 grafts may be so scattered as not materially to change the top of the tree or its fruit. Graft only on such as are sound and vigorous.

Haggling off limbs and branches and leaving stumps on the trees, which rot off and let the water into the trunk, soon destroys the tree; therefore always cut or saw off smooth, when the wound will heal and the bark grow over.

Sound vigorous trees, and no other, should be set out, as they take no more trouble or space than the worthless ones.

Budding should only be done with fresh buds, on very small stocks of vigorous growth. Begin after sap starts, until first June. Later will do:—Make incision like a T; raise the corners and insert the bud with as little of the wood as possible, and bandage, not too tight, for three weeks.

Scions may be cut in February or March, before or after the time the buds begin to swell; or take grafts size of a pipe stem, from bearing branches, not from side shoots nor the rank growth of the top. Put in earth one third their length, keep from frost, and occasionally sprinkle to prevent shrivelling, but not so wet as to sprout them.

Composition.—Rosin 8 oz., beeswax 3 oz.; melt up with lard, and work it like shoemakers' wax: for wounds made in pruning or grafting.

Split the stock, drive in a wedge 6 or 8 inches long, open the split so as to admit the graft freely, sharpen end of graft and insert, matching the wood of graft and wood of the stock; remove the wedge carefully, and cover smooth over with composition, tight, to exclude air, and the sap will force its way to the graft.

Seed.—Select from healthy trees, sound ripe and fair fruit, and place in sand, in a cellar or other cool, damp place, until time to plant. If kept too dry, they seldom vegetate. Let the soil be good, well worked, not too wet; cover up and press the ground moderately over. Plant in fall before the ground is frozen, or in spring soon as the ground can be worked.

Soil.—Low wet or marshy ground is not suitable. Soil appropriate for crops of grain is also adapted to the cultivation of fruit trees, shrubs or

vines. Occasional digging, mellowing the ground, keeping down underbrush and weeds, and manuring, are beneficial.

Cleanliness is essential. Destroy all caterpillars, noxious worms and insects, and prune off all affected parts. Scrape off rough ragged bark and moss, and wash well with soap suds or eover with a coat of lime wash. Remove all suckers from the roots, side branches and excrecences.

Grubs, which occasion disease, may be prevented by coating the roots and lower trunk, about 1st July with tar, train oil, or whitewash, and sprinkling a little lime, ashes or soap suds, on the ground around the tree. When seriously affected, dig the earth from the roots near the surface, and search thoroughly in the bark for the grub; cleanse off the gum, &c., wash with ley or soap suds, or rub dry ashes over them, and close up with good fresh earth. Doing this as occasion requires, will ensure health and vigor.

HEALTH.

PUBLIC ECONOMY AND PUBLIC HEALTH.

It has been well said, by a recent writer, that if part of the large sums expended on over-fed Hospital patients, and pampered nurses, on rents and Dispensaries, and outlay of medicine, were *appropriated to the prevention of diseases* among the poor, it is probable that more extensive benefits would be conferred, than can be afforded in the limited and local range of Infirmarys. If half the amount annually spent in the purchase of liquors and medicines, for charitable institutions, were *early and judiciously* laid out in precautionary means of preventing diseases among the indigent, the hospital would have fewer inmates, and the asylums for orphans would not be so crowded. Among these preventive means be it added, that the chief way to ward off the evils of intemperance, and to protect the system against atmospherical unclemlencies.

The expense of an establishment in every village, *free to the poor*, or at least a small nominal rate, where they could enjoy the advantages of warm and tepid baths, with a drying stove for their clothes, and such other auxiliary means as humanity might suggest, would be a minor consideration, when put in competition with the benefits resulting to the working classes, in warding off impending diseases, and the inevitable ruin which is almost invariably attendant in their train. Almost every village has its alms-house. True charity ought to be displayed in preventing the

necessity for such building. Now we hazard little in asserting that, if under the same roof were to be found public baths, a public library, and a hall for a temperance association, the poorer inhabitants of our towns and villages would be healthier than at present, and in place of being a burden, would contribute their share to the support of the State.

DIETETIC MAXIMS.

1. A healthy appetite is to be acquired by early rising, regular exercise in the open air, and abstinence from intoxicating liquors.

2. The food should be eaten slowly, and well masticated.

3. Animal food is sooner digested in the stomach than vegetable; but it is more stimulating or heating to the system. Flesh long salted, dried hams, beef, &c., are less easily digested and less nutritive than fresh meat.

4. Farinaaceous and vegetable food, generally, is slower of digestion than animal, but it is less heating.

5. Solid food, or food of a certain fibrous or pulpy consistence, is more fitted for digestion in the stomach than rich soups, jellies, and all highly concentrated sauces. The latter are rendered more digestible by the addition of bread.

6. Fish are not so nourishing as the flesh of land animals. The white fish are less apt to disagree with the stomach than the red.

7. Roasted meat is more nourishing than boiled, but much more stimulating.

8. Bread should be perfectly raised, fully baked, and one day old.

9. Salt, and a moderate quantity of pepper, are safe: beyond this, all seasoning becomes injurious.

10. Different dishes at one meal, interfere with digestion.

11. All excess in eating should be avoided.—The best guide is to be found in the calls of a healthy appetite.

12. Health, and strength of body, depend upon the health of the stomach and consequent perfection of the digestive powers.

13. Water is the most wholesome drink. Toast and water, sweetened water, or water with a slight addition of a vegetable acid, are useful diluents during the summer.

14. Distilled and fermented liquors impeded digestion; and, when drunk to an extent, invariably destroy the tone of the stomach, and of the system generally.

15. When the stomach is weak, but little fluid should be taken during or after eating.

16. Exercise should be used in the intervals between meals, but not immediately before or after them.

ACCIDENTS.

There are few things in relation to which people commit more egregious errors, than the proper assistance to be rendered to individuals to whom an accidental injury has occurred. In that of a wound attended with a profuse discharge of blood, the patient's life would be destroyed by a few moments' delay; while in every case a trifling injudicious interference in the off-set, may add greatly to the subsequent danger and suffering: it is important therefore that the public generally be made aware of the proper course to be pursued, when an accident occurs, previously to the arrival of the physician.

Wounds.—The only proper dressing for these accidents are such as are best calculated to keep the wounded surfaces in contact, and to defend them from the air and external injury. The milder and softer the materials of which they are composed, the better: above all, everything of a heating or irritating nature should be avoided. A simple cut, which might have been healed perfectly in a few days, has often been converted into a serious, painful, and tedious sore, by such applications as brandy and sugar, turpentine, balsams and the like; or by having crammed between its edges a quantity of lint, tow, soot, charcoal, or cobwebs; all of which are frequently resorted to. They invariably induce a degree of inflammation, which interrupts the healing process of nature.

When a wound has been received, the first thing that claims attention is the presence of any foreign substance, as splinters of wood, portions of stone, glass or bits of cloth, &c. These should, if possible, be at once extracted, and the wound washed with a soft sponge or rag and water. But when the exhaustion of the patient is considerable, or the flow of blood profuse, whatever foreign substance may be contained in the wound, must be suffered to remain until, in the judgment of the physician, it may be safe to attempt their extraction.

The bleeding from a wound, even though at first profuse, will often in a short time cease spontaneously; and, if the injured part be kept at perfect rest, will not again return. Should this, however, not be the case, and the flow of blood is very considerable, especially if it be in a continual stream or in jets, it should be arrested without delay, by

making pressure upon the divided vessels, between the heart and the wound. When the injury has been received in either of the limbs, a firm broad ligature or bandage should be applied a short distance above the wound. The best plan is to place around the limb a strong broad garter, sufficiently slack to allow of a short stick being introduced under it, and by which it is to be twisted until it is tight enough to arrest the bleeding. Of course this is merely a temporary expedient, as the continuance of such a bandage for any length of time would be productive of injury. In wounds situated in a part of the body where the above means cannot be resorted to, the bleeding may be arrested by applying the hand firmly over the wound, or, by the finger passed within the wound, pressure may be made directly upon the orifice from which the blood proceeds.

In slight wounds, which do not penetrate much deeper than the skin, nothing better can be applied than the common sticking-plaster. This, by keeping the edges of the cut together, and preventing the contact of the air, &c., permits the process of union to go on without interruption.

Persons who have received a severe wound, or indeed a severe injury of any kind, ought always to be kept at rest, and perfectly composed. The part especially in which the wound exists, should be prevented from any degree of motion, and be kept as elevated as possible without its being placed in any constrained posture. Quiet and cheerfulness of mind are also of importance.

Sprains and Bruises.—The part in which these accidents have been received must be kept at perfect rest, elevated, and completely free from all heavy dressings or tight bandages. The best immediate applications are cloths wet with cold water or cold vinegar and water. It is a very common error, whenever any severe accident of this kind occurs, to have the individual immediately bled. In all cases of accident, much evil is liable to be produced by the loss of blood before the system has in some degree recovered from the depression into which it is invariably thrown upon the receipt of any severe injury: it is better always to delay bleeding until the advice of a physician can be procured.

Burns and Scalds.—When of moderate extent and occasioning only a redness of the skin, the best immediate application to a burn or scald is cold water or cold vinegar. The application of immersion should be continued for some considerable time, and without a moment's intermission. When the skin is raised in large blisters, the

ould be punctured; after which a mixture of one rt of linsced oil and two of lime water, smeared er the burnt surface, will be found a very soothing application. The burnt part may then be apped in raw cotton. When the burn is extensive, and has completely destroyed the skin, the plication of spirits of turpentine is attended h the best effects: care should be taken to eone it to the injured parts, not allowing it to come contact with the sound skin. As the ulcer eonsequent on a burn is always tedious in healing, d when mismanaged, liable to be attended with unsightly scar, or even extensive deformity, the endanee of a physician should be procured.

TREATMENT OF DROWNED PERSONS.

As soon as the body is recovered, wipe it dry, d wrap it up in blankets, and place it in some venient place, with the head slightly elevated; ring free ventilation in hot weather, and allow- ing no person to be present except those employed operating. Let the head be wiped dry, and ered with a woollen cap. Several attendants ould be employed in rubbing the body with stim- ing articles, such as mustard, hot brandy, &c., d bags of hot sand, hot bricks, &c., applied to feet and other parts of the body. While this eing done, the mucus should be removed from mouth and nostrils, and other persons should employed in inflating the lungs, as follows: In- t the pipe of a common pair of bellows into nostril, close the other nostril and the mouth, n blow gently, and cause the air to escape by ssing on the chest, having first removed the ger from the nostril. This is to be continued a long time, the object being to imitate the ecess of breathing. Let this plan of treatment pursued until the arrival of a physician.

BEAR GRASS.—The Pilatka (Fla.) Sun says:— r. Sweaberg and another gentleman have been urning in our town a few days, on their return n an exploration of the country on the river ve this place. They selected this season as most unfavorable, that they might see the st condition of the country. The object of Sweaberg is to establish a number of German ilies; to cultivate the Bear grass and Sisal up, which he believes can be profitably culti- d for cordage and sail-cloth. The Bear grass be cheaply prepared by a chemical process so o be of very fine fiber, from which a very good ity of cloth is fabricated.

ON THE CULTIVATION OF TOBACCO.

“Notes on the Cultivation of Tobacco” by that excellent planter and yet better man, the late PETER MINER, of Albemarle, Virginia.

OF THE PREPARATION OF THE LAND, AND THE CULTIVATION OF THE CROP.

THE best tobacco is made upon new or fresh land. It is rare to make more than three successive crops upon the same ground, of which the second is the best, the first and third being about equal. But it is more common to make only two. The new land, after all the timber and brush is removed, and the surface very cleanly raked, is twice closely coultured as deep as two horses or oxen can pull. After this, hands with grubbing hoes pass regularly over the whole ground, and take up all the loose roots that have been broken by the coulters, which are heaped and burnt, or removed. One, and sometimes two more coulturings are then given, and the same operation repeated with the grubbing hoes, which leaves the land in proper order to be killed: this is universally done in straight rows at the distance of three and a half feet apart, giving the same distance, as near as the eye will permit, the other way; in fresh land, that is to say, for the second and third crop, the line of the original row, and even the locality of each hill should be preserved. After passing the coulters two or three times between each row, the hills should be made in the same place, the remains of the stalks and roots of the plant being first removed. It is supposed, from the excess of nitrous particles contained in tobacco, above any other plant, that the partial decomposition of this stubble during the winter imparts a degree of fertility to the spot which should not be lost by the diffusion and exposure of a general ploughing.— It is most advisable, too, that the hilling of new and fresh land should be done as early in the spring as possible, say three or four weeks before planting. This affords time for the hill to settle to a proper consistence, and presents a more extended surface to be acted on by atmospheric influence, which perhaps is greater in the spring months than at any other season of the year.

On the bottom land of our rivers there are extensive alluvial flats that bear successive crops of tobacco for many years, and some planters resort to highly manured spots conveniently situated upon high land. But in general, it is considered bad economy to manure land for tobacco, both because the quantity required for that crop is greater than

for any other, and because the quality of the product, as well as that made on low grounds, is coarser in fibre and less marketable. The preparation of such land, however, is the same as that of new ground, except that the large plow and harrow are substituted for the coulter and grubbing hoe, and the hilling may be a little longer delayed.

If the seasons have been favorable, and the plant beds duly attended to, as before observed, the plants will be ready to set out from the 15th to the last of May. It is most common to wait for rain, or *season* as we call it, to perform this operation, in which case the hills must be previously cut off about four inches above their base; but in early planting it is quite safe to proceed without a season, provided it is done in the evening, and the hills cut off at the same time. It is universally admitted that a moderate season is better than a very wet one; and that is considered the best, in which the earth does not entirely lose its friability, but at the same time will bear to be compressed closely about the roots of the plant without danger of becoming hard or baked. Under the most favorable circumstances, however, some plants will fail or perish, and therefore the ground must be gone over after every rain until the last of June, to replant the missing hills. It is not important here to describe the mere cultivation of the crop as it respects tillage, it being only necessary, as in the case of all other plants, to keep the earth light and free from weeds and grass. This is generally done by two weedings, first by scraping a little earth and all the young grass from the plants, and then in a short time restoring the same earth, and as much more as will make a considerable hill around each. In old land, and that free from stumps, the single-horse shovel-plow is used with great advantage as an auxiliary to the hoe.

When the plants attain a proper size, which observation and experience will readily point out, they are to be primed and topped. The priming is merely stripping off four or five leaves at the bottom, leaving about a hand's breadth between the first leaf and the top of the hill. Topping is simply taking out the bud with the finger and thumb nails, leaving the necessary number of leaves, which in general is not more than eight, though the first topping may be to nine or ten leaves to make it ripen more uniformly, and bring the crop into the house more together. For the same reason, the late plants are not topped to so many, falling from eight by degrees as the season expires, down to six and five. A little practice, and slight attention to the manner in which the

leaves grow from the stalk, will soon enable a person to perform this operation with great dexterity and dispatch, without counting the leaves. All that is requisite after this until the plant is fit to cut, is to keep it from being eaten by the worms, and to pull off the suckers that grow out at the junction of the leaves to the stalk. These suckers put forth only twice at the leaves, but after that indefinitely and continually from the root;—and it is thought injudicious ever to let them get more than a week old, for besides absorbing the nutriment necessary to push forward, and increase the size and thickness of the leaf, the breaking them off when of a large size makes so great a wound as greatly to injure the after growth of the plant. In general, about three months is requisite to perfect the growth of tobacco, from planting to cutting.

OF THE DISEASES AND CASUALTIES TO WHICH IT IS SUBJECT, AND ITS TENDENCY TO EXHAUST LAND.

Tobacco is subject to some diseases, and liable to be injured by more casualties and accidents than any other crop. That growing upon new or fresh high land is seldom injured by any other disease than the *Spot* or *Firing*, which is the effect of very moist succeeded by very hot weather. For this we know of no remedy or antidote. Tobacco growing upon old land, particularly upon low flats, besides being more subject to Spot, is liable to a disease we call the *Hollow Stalk*, which is an entire decay and rottenness of the inside or pith, terminating gradually in the decay, and final dropping off of the leaves. This disease is sometimes produced by the wounds caused by pulling off overgrown suckers, thereby admitting too great an absorption of water into the stalk through the wound. In land not completely drained, the plants are sometimes apt to take a diminutive growth, sending forth numerous long, narrow leaves, very thickly set on the stalk. This is called *Walloon* tobacco, and is good for nothing. As there is no cure for these diseases when they exist, we can only attend to their prevention. This will at once be pointed out by a knowledge of the cause, which is too much wet, and indicates the necessity of complete and thorough draining before the crop is planted. It may not be amiss here to mention, that tobacco is more injured than any other crop by plowing or hoeing the ground when it is too wet, and to express a general caution on that head.

The accidents by which tobacco is often injured and destroyed, are high winds, heavy beating rains, hail storms, and two kinds of worm, the ground or

cut worm, and the large green horn worm. High winds, besides breaking off the leaves and thereby occasioning a great loss, are apt to turn them over. The plant, unlike most others, possesses no power to restore the leaves to their proper position, which must shortly and carefully be done by hand, otherwise the part inverted will gradually perish and moulder away. Those who have studied the anatomy of plants can tell us the cause of this, as well as why nature has denied to tobacco the faculty of restoring its leaves to their proper position. The ground worm, the same which is sometimes so fatal to corn, is ascertained to be the larvæ of the common black bug, found in great numbers under wheat shocks, &c. This worm is seldom or never found in new land, but abounds in old or manured ground; and in some years I have seen them so numerous, as to have from forty to fifty taken out of one hill in a morning. The alternatives are either to abandon the crop, or to go over the ground every morning, when they can be found at or near the surface, and destroy them. The missing hills to be regularly replanted. The horn worm is produced from a large, clumsy, gray colored fly, commonly seen late in the evening sucking the flowers of the *Stramonium* or *Thorn-apple*, commonly called here the *Jamestown Weed*. The flies deposit their eggs in the night on the tobacco, and all other narcotic plants indiscriminately, as Irish potatoes, tomatoes, &c. In twenty-four or thirty-six hours, the eggs hatch a small worm, which immediately begins to feed on the leaf, and grows rapidly. Great care should be taken to destroy them while young. Turkeys and Guinea fowls are great auxiliaries in this business, but the evil might be greatly lessened if the flies were destroyed, which can easily be done in the night by a person walking over the ground with a torch and a light paddle. They will approach the light and can easily be killed. In this way I have known a hundred killed in one field in the course of an hour.

Tobacco has been reproached as the cause of the general exhausted condition of our lands, of the slow-paced improvement in the Virginia system of agriculture; in short, as the bane of all good husbandry. This stigma is, I am persuaded, in a great measure unmerited. It is true, that like Indian corn, from the frequent and high degree of tillage requires throughout the summer, it exposes the ground to be washed by hard rains, and evaporated by the hot sun; but the plant in itself is less an exuster than corn or wheat. A proof of this is to be found in the superior growth and perfection to which any crop will arrive when grown after tobacco, than after any thing else, not excepting clover that has been plowed in. Perhaps this may be accounted for from the facts, 1st. That the roots and

stubble of tobacco left on the ground are more in quantity, and contain more of the essential qualities of manure, than those of any other plant; 2d. The plant itself while growing feeds more from the atmosphere than any other; and 3dly. It is not suffered to go to seed, the process in all vegetation which is supposed to make the greatest draft on the fertility of the earth. Neither is the culture of tobacco incompatible with a proper rotation of crops, and an improved system of husbandry, for we find as extensive and as successful efforts at improvement made in the tobacco region, and by tobacco makers, as in any other section of our State.

From the Hillsborough Recorder.

DEAR SIR: While sending next year's dues for the "Recorder" in advance, permit me to ask whether others, like myself, have lost the Fall crop of Irish potatoes by an insidious enemy, new to me, and to whose habits I wish to direct the attention of our entomological friends. I know not its name, nor even its appearance; for when its dreadful work attracted my observation, it had already passed the limit of my unscientific vision.

The potatoes were planted late in June, came up quickly and grew off luxuriantly, promising a rich harvest. A few days before the flower, I was surprised by the yellowish tinge which the patch assumed; but other engagements diverted my attention a week or ten days, by which time the leaves and stalks had become black, with only here and there an exception. It was now too late for an unpracticed eye to detect the foe in his hiding place, if indeed he had not retreated to an invisible distance. The point of attack, however, was obvious. The stalk was wounded at or a little below the surface of the ground, and though the greater part of them stood erect a week or two, yet life was destroyed. Many seemed eaten half through, as if by a grub. Not one perfect potato was made, except on the very few stalks not attacked. The wagon loads of anticipation dwindled to meager bushels. In short they did not make seed.

The Spring crop was not attacked. It is the Fall crop, however, that we rely on for keeping through the winter, and until spring vegetables grace our tables, as well as for market; and, unless this new enemy be arrested, a substitute for the Irish potato must be sought. Please set on the hunters.

Very respectfully yours,
W. J. BINGHAM.

December 15th, 1855.

IMMODERATE pleasures shorten existence more than any remedies can prolong it.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., FEBRUARY, 1856.

THE CARE OF CATTLE.

On almost every road leading into the City, one can see, any evening, long files of lean, gaunt, half-starved cattle, returning from picking up a very scanty portion of forage in the woods, to yield an equally scanty supply of a watery fluid, nicknamed "milk," for their owners' supper. The wonder is how these animals can live and move; for, really, with a few exceptions, it would require about six of them to be melted down and moulded into a reasonably decent looking cow: Compared with a thorough breed, they do not seem to belong to the same species, and instances have been known in which high bred cows would not associate with them. It is obvious that this state of things cries aloud for remedy, and this remedy is in our own hands: every consideration of utility and beauty, reason and humanity, and, lastly, of profit, absolutely requires that our fields and highways should not be haunted by such spectacles.

Religion, the law of kindness to all, brutes as well as men, enforces the duty of caring for them, for "a righteous man regardeth the life of his beast."—(Prov. xii, 10.) How distressing is it all thro' a long and dreary winter, amidst snow and sleet, to hear their mournful lowings! to think of the very animals on which we depend for so many of our comforts, exposed all the bitter night to the piercing blast, no shed, no food, no drink! to see them drawn up almost into a semicircle, benumbed with cold! or to step from our comfortable firesides and find one dead with cold and hunger at our gates or in our barnyards! Christians that we are! The wild Bedouin of the desert nurses his charger with all the tenderness of a mother; when a camel is born he assembles his tribe to rejoice with him; the young one sits in his bosom and is unto him as a daughter; their wounds, their sickness, their age is watched and tended as the one thing of importance. What farmer can say half so much here of the animals which have been born and bred under his eyes?—Our horses are generally provided with stables and something to eat; but the poor, meek cows, who care for them? In London, there is in flourishing existence a "Society for the Prevention of cruelty to Animals," who have lost a great deal of good in

softening down the hardships brutes necessarily submit to for our subsistence! They carry before the courts those cases of cruelty which come to their knowledge; and recently they prosecuted a Jewish butcher for slaughtering an ox by cutting his throat only, instead of first knocking him on the head.—Their surgeons buy up old, diseased and disabled animals, which they dissect and study; thus not only relieving an individual of pain and misery, but working out, by the knowledge thus obtained, immense benefits to the whole race.

But our concern is more immediately with the farm-yard. Our farmers have yet to learn that "shelter is cheaper than food;" many argue that because animals eat more when exposed to cold and wet, than under shelter, therefore they should fatten faster. Could they speak, they might answer as does Shylock of old, remonstrating in favor of his persecuted brethren, "Hath not a Jew organs, dimensions, senses, affections, passions? fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer as a Christian is? If you prick us, do we not bleed? if you poison us, do we not die?" Their organs are similar to ours, perform the same work in a measure, and answer the same ends. Now, the fat of animals is only the surplus of the food after answering the vital wants of the system; their food, therefore, serves a treble purpose,—supplies the waste of the system, produced by the natural wear of the organs, keeps up respiration and the resulting heat, and increases the flesh. The wear and tear of the system depends on the amount of labor they undergo; hence, the more quiet they are kept, allowing enough exercise for their health, the less will be the amount of food necessary to supply the waste. The heat of the body results from the consumption of carbonaceous food, especially the oily and starchy portions. The union of carbon with oxygen in a burning candle, producing light and flame, has an exact counterpart in the lungs and blood of an animal, when the air drawn in at each respiration unites with the oily matter of the blood, procured under the form of carbon from the food, and gives heat to the system; almost every chemical union, in fact, being attended with heat. Of course, then, the colder the weather the less surplus fat or profit will be obtained from a given amount of food, so much being required to sustain the heat of the body. All hibernating animals lay up a supply of fat for their "long winter's nap." Without this accumulation, they could not exist: a fat animal bears starvation much better than a poor one. The hump of the camel constitutes just such a fund, and after a long and hard journey, accompanied by starvation, this hump has been found to be almost wasted away.

Another important matter, often overlooked, is this: In the coarser substances, such as hay, straw, &c., there is only a small proportion of oily or carbonaceous matter, and so, to get the amount necessary for their sustenance, they are necessitated to consume a prodigious quantity of food. This overtaxes the digestive organs, and results more or less in debility. This is the explanation why a small quantity of meal, which supplies oil and starch, both of which are rich in carbon, the chief heat producing element, will keep an animal in so much better health. Cattle require large amounts of coarse forage, its bulk materially aiding digestion; but this should be well mixed with stronger food. Cut feed, consisting of clean straw, corn tops, blades, &c., steamed and salted and mixed with the corn and cob meal of the Little Giant, with an occasional bait of oil cake, oats, peas, pumpkins or turnips, collards, &c., is fittest for milch or fattening cattle. A well attested experiment is recorded, which produced the very first quality of beef, of the most delicious sweetness, finely streaked with fat and lean, and of the utmost tenderness, without extra expense, from old oxen: This was done by supplying them with food that would most rapidly form lean flesh and keeping them from such exercise as would harden the muscles; they had also turnips, cabbages, beets and hay. The meat and milk of such cattle, constituting as these two articles do almost our staples of food, must be vastly better, more wholesome and more nourishing than that produced by the half-wild and wholly starved specimens roaming around us.

The soiling of cattle has been generally found the cheapest and most beneficial method of keeping them; it consists in raising large crops of green food, as clover, turnips, beets, &c., and feeding them entirely in stalls and yards or only allowing them a limited range of pasture for recreation and exercise. In our climate, for a large portion of the year, no better or cheaper food need be provided than Indian corn, cut green; drilled early and thick, it soon shoots up strong and yields an amazing amount of green fodder, 20 to 40 tons per acre; in good soil it will bear cutting more than once, and will certainly pay, even if it conferred no other benefit, but by improving the soil: it might also be dried and stacked, if carefully tended, for future use. An immense advantage arising from this method would be that we should do without our interminable and expensive fences, except perhaps a few for confining the cattle. We should vary our employments, and refresh our lands by judicious rotation; should accumulate large quantities of manure, now wasted along the roads and over the woods, and should effectually and beneficially promote the health and comfort of our

cattle, making more and better beef, milk, cream and cheese. And this plan is not near so expensive as might be imagined; the surplus profits going a long way to pay the extra expense. A gentleman has related to us an incident which happened within his knowledge, on his father's plantation: "The old man," having a number of little negroes, was seriously inconvenienced by the want of milk, all the cows generally failing at once. So on the approach of winter he selected three, housed, watered, fed and tended them carefully, and they yielded an abundance of milk of the best quality, much longer than they had ever done before, and long after the others had gone dry.

In the Western part of our State, among our magnificent mountains, where the grass grows spontaneously and in exhaustless abundance, fine cattle and splendid beef are raised without the expense of feeding, except for a short time in winter. When the unconquered Indian roamed this western world, our section, too, was overspread with a luxuriance of the finest and sweetest grasses; so that the very spot where our proud Capitol now stands may have been the chosen resort of the bears, turtles and deer. But we have changed all that, and it now remains the imperative duty of every intelligent farmer or prudent housekeeper, at least to provide shelter for his cattle. For mercy's sake, give them a little hay, a handful of meal or a couple of pumpkins, and for every additional care, they will abundantly repay, if in nothing else, in their happy and contented looks. Salt is absolutely necessary for them, and fresh water alone by all means a supply of pure water in the yard, that they may get a drink morning and night. Any one who hears our quiet sufferers tormented along the road by worrying dogs or worse boys, and sees them crowding around a filthy puddle to moisten their parched lips, or clustered around a frozen trough in winter, would surely need no incentive to so simple a deed of humanity as this. There is no danger of their eating too much salt or drinking too much water. To say of any one "he drinks like a horse," should be regarded rather complimentary than otherwise; for animals left to themselves, unless over-heated, never drink too much. Salt promotes the appetite and assists digestion; it is a necessary constituent of perfect blood, about one-half of its weight when burnt being common salt; it is probable, also, judging from human physiology, that the saliva of animals contains a large amount of it. Currying, too, is of the greatest importance; it loosens the skin, promotes the insensible perspiration, smooths the coat, and makes them feel a great deal better. It is as essential to them as our daily ablutions are to us, and it has been said by one who ought to know, that a

"good currying and brushing was equal to a meal." Let our farmers only think; we all need to stop sometimes, in this go-ahead age, and think: Consider how much we lose by want of care for our cattle; how many stray off and are lost, stolen or starved to death and never heard of afterwards; how much we would gain by keeping fewer and better cattle; our ears not pained by their mournful lowings as they crouch to the bitter storm; our eyes not tortured by the miserable, forlorn objects, we every day meet in our streets. Let them consider how the reproach of carelessness and cruelty rests on us as a people, and how it behooves every patriot and Christian, (for a good farmer should be all this,) to do his part to wipe this stain from our fair escutcheon.

NORTH CAROLINA CHRISTIAN ADVOCATE.

This is the title of a new paper, with which we are politely favored with an exchange, published in this city, at the office of the Spirit of the Age, under the direction of the North Carolina Conference of the Methodist E. Church, and edited by Rev. RUFUS T. HERLIN. Though issued hastily, in order to take an even start with the new year, before its intended dress of new type had arrived, it makes quite a respectable appearance, and gives the promise of what might be expected from the known ability of the Editor, of an interesting and useful public journal. Terms, \$1.50 a year in advance.

THE TIMES.

We are gratified also to number with our exchanges, this new Literary and Independent Journal, which takes the place of the Guardian, published at Greensborough, N. C., by Messrs. OGBURN, COLE & ALBRIGHT. It is neatly printed, and conducted with spirit and ability. Terms, \$2 per annum in advance.

AMERICAN AGRICULTURIST.

This valuable and ably conducted paper is now published monthly as well as weekly. Those who have ability, and desire to keep promptly posted on the advancement of agricultural improvement, ought to take the weekly. Though published in New York, much attention is paid to Southern Agriculture, and our people would be greatly benefited by reading it regularly. Published by Messrs. ALLEN & CO., New York. \$2 for the weekly and \$1 for the monthly.

NEW PAPER.—Dr. E. L. Perkins proposes to publish at Clinton, the "Independent," a weekly newspaper "devoted to Literature, the Arts, &c." Terms, \$2 per annum. Dr. P. will no doubt bring out an interesting and useful paper.

WE would again remind our readers that their subscription year is near its close; and if those who have not paid their subscriptions, would save fifty cents, they must forward their dollar without further delay. If they do not pay *within* the year, our terms require \$1.50. It will give us greater pleasure to receive the one dollar *before*, than the one fifty *after* the close of the year.

TRANSACTIONS of the Sixth Annual Meeting of the Medical Society of the State of North Carolina, held at Salisbury, N. C., May, 1855. Wilmington: printed by Fulton & Price.

This is an interesting pamphlet, of 40 octavo pages; from which it will be seen that this institution is beginning to contribute something to the general stock of knowledge in the healing art;—and it must be obvious to all, that by proper efforts on the part of its experienced and skillful members, the Society may attain to a high distinction, elevate the Profession, and confer great benefit on the public. Its work is one of the highest importance, and we hope that all of our oldest and most distinguished Physicians will lead the way in its arduous and useful duties. Its officers for the present year, are Dr. Charles E. Johnson, Raleigh, President; Doctors M. Whitehead, Salisbury, E. R. Gibson, Johnson B. Jones, Chapel Hill, O. F. Manson, Granville, Vice Presidents; Dr. S. S. Satchwell, New Hanover County, Secretary; Dr. James B. Dunn, Wake, Treasurer. The next annual meeting will be held in Raleigh, on the second Tuesday in May, 1855.

Henceforth, let the motto of every soul in North Carolina—every individual, class and association—in every intellectual, social, civil, moral and religious department of life—be IMPROVEMENT—THE HIGHEST PITCH OF IMPROVEMENT AND PERFECTION.

THE NEW ENGLAND FARMER: Boston. Simon Brown, Editor. This excellent and beautifully printed journal, with the new year, commenced a new volume. It contains much to interest and instruct Farmers in every section of the country. Price \$1.

THE HOMESTEAD is a weekly journal, devoted to Agriculture, &c., published at Hartford, Connecticut, by Andrew Stark, and edited by Messrs. Clift, Gold & Dyer. It is a neat and valuable paper, at \$2 a year.

THE N. YORK HORTICULTURAL REVIEW.

We have received several numbers of this new monthly, published by C. REAGLES, 208 Broadway, New York. It is designed to fill the place formerly occupied by Downing's Horticulturist. The Editor, who is a practical Nurseryman, manifests a thorough acquaintance with his business, and is assisted by able contributors. The work is neatly printed and handsomely illustrated, and will doubtless perform useful labor in the department to which it is devoted.

CLEAVELAND TIMES.

This is the name of a new paper, by Messrs. A. P. & J. E. NEWSON, published at Shelby, N. C., which, as it promises to devote much of its space to the interests of agriculture and the mechanic arts, we cordially take by the hand and wish abundant success.

THE SOUTHERN PLANTER.

This valuable monthly, edited by F. G. RUFFIN, Richmond, Va., with the January number, enters upon a new volume. This work ought to be extensively read in North Carolina. Price \$1 a year if paid in advance.

THE AMERICAN FARMER.

By S. SANDS & WORTHINGTON, Baltimore, has also just entered upon a new volume. It is a standard work in Agriculture, and should likewise be extensively read by our people. Now is the time to subscribe. Price \$1 a year.

HILL-SIDE DITCHING.

We would again call the attention of our farmers to the importance of Hill-Side Ditching.—The article on the subject, giving full directions, published in our June and July numbers, has given great satisfaction to all who have adopted the plan recommended. Several in this county, have verbally assured us that they have tested its value, and that they are well pleased with the result.—We have also a letter before us from Mr. Jacob Newbery, of Troy, Mississippi, who says, "I have tried it sufficiently to ascertain its indispensable benefit to our country, which is so much given to rushing." He adds, "I desire the continuance of the Arator until further ordered, which, if it continues to be as interesting and valuable as I have found it so far, I shall never order the discontinuance."

THE "PLYMOUTH BANNER."

This is the name of a new paper to be established in Plymouth, N. C., by C. G. Davenport and C. H. Kelly, Editors and proprietors. Terms, \$2 per annum in advance.

ADVERTISE! ADVERTISE!

If any one desires to present his goods, wares, implements, or merchandize, directly before the eyes of the "bone and sinew" of the country, let him advertise in the ARATOR.

PREPARATIONS FOR THE STATE FAIR.

The Executive Committee met in this City on the 8th ultimo, and proceeded to prepare a Premium List, and adopt other measures, preparatory to the next October Fair. These early steps in the good work augur well for the operations of the year and the success of the next Fair. We are indebted to the Standard for the following statement of the proceedings of the Committee. We expect to be furnished soon with an official account for publication in the Arator.

Present, Hon. Thos. Ruffin, Chairman, and Jno. S. Dancy, R. A. Hamilton, W. H. Jones, W. R. Pogle, and Charles L. Hinton, Esquires. Absent, R. H. Smith and Paul C. Cameron, Esquires—the latter of whom, we learn, is on a visit to the South. Mr. Smith would no doubt have been in attendance, but from causes over which he had no control. The attendance of so many of the Committee, including the venerable and distinguished President of the State Society, at so inclement a season, furnishes strong evidence of their zeal in the cause confided to their hands, and of their disposition to do all in their power to forward the interests of the Society.

We learn that the principal business of the Committee was to prepare a list of premiums, and that this duty has been performed, and the list will be published at an early day. The list, we are informed, has been considerably increased, and larger sums than heretofore have been offered in some cases to competitors for premiums.

It was resolved, we learn, to tender invitations to the Editorial fraternity to be present. A stand will be erected on the ground for their accommodation, and every facility will be afforded them in their labors in preparing notices of the articles and proceedings at the fair.

It is expected, also, that the tastes and views of the young gentlemen and ladies who may attend, will be consulted and met by *cotillion parties* eva-

ry evening during the Fair, to be given at the Hotels in the City; these parties to be, of course, under the superintendence and management of the Marshals of the State Society. The utmost decorum will be maintained; and it is expected that this feature will add to the number present, and to the general good feeling and enjoyment. An excellent band of music will be provided for the occasion.

We anticipate a larger, more useful, and more imposing Fair next October than has ever been held in this State. Let all the friends of agricultural, horticultural, pomological, and mechanical improvement, and all who desire advancement and perfection among our people in varied handicraft and the fine arts, bestir themselves at once, and second and sustain the Committee and the officers of the Society generally, in their efforts to make the next Fair what it should be—AN HONOR, AND THE MEANS OF GREAT USEFULNESS TO NORTH CAROLINA.

SINCE the above was in type, we have been shown by the Secretary, the official record of the proceedings of the Committee; from which it appears the Standard's statement is substantially correct, and we have only to add, that John C. Partridge, Esq., was appointed Secretary to the Executive Board, and a resolution was adopted to pay all premiums of \$25 or more, in plate, unless otherwise desired by the recipient. As the remarks of the Standard, however, in regard to the contemplated "cotillion parties," may be misinterpreted, it may be proper to state that this matter formed no part of the official proceedings, and cannot, of course, be in any way connected with the transactions of the Society. It is a feature which must depend altogether upon individual taste and enterprise.

For the Arator.

TOPSAIL SOUND, NEW HAMOVER CO., N. C.)
December 18th, 1855.

MR. LUMAY: Enclosed I send you \$1, subscription for the Arator the next year.

We asked for information through you, concerning the destruction of Cane Grass. I have been absent from home a part of the year, and consequently have failed to receive every number of the Arator; but I have not seen any answer. Probably you never received the communication last spring. Be that as it may, I will now say is there anything better than a full crop or two of guinea rice on the land? If so, let us know it.*

Yours, C. H. ALEXANDER.

The following is the Premium List prepared and furnished officially by the Secretary. Let all who can, contend for prizes.

PREMIUM LIST,

For the Fourth Annual Fair of the North Carolina State Agricultural Society, to be held in Raleigh the 14th, 15th, 16th and 17th days of October, 1856.

Branch I.—Live Stock.

FIRST DIVISION.

1st Class—Thorough Bred.

- | | |
|--|------|
| 1 For the best Stallion over 4 years old, | \$25 |
| 2 " 2nd " " " " | 15 |
| 3 For the best Stallion over two and under four years old, | 15 |
| 4 For the best Stallion Colt under 2 years old, | 10 |
| 5 For the best Brood Mare over 4 years old, | 20 |
| 6 For 2nd " " " " " | 10 |
| 7 For best brood Mare and Colt by her side, | 20 |
| 8 For best Filly under 4 years old, | 10 |

In this class, purity of blood being the highest point of distinction, a well authenticated pedigree must in every case accompany each animal put on exhibition to compete for any of the above prizes.

Second Class—Draught Horses, for Road and Farm Work.

- | | |
|---|------|
| 1 For the best stallion over 4 years old, | \$25 |
| 2 " " 2nd " " " " | 15 |
| 3 For the best Stallion over 2 and under 4 years old, | 15 |
| 4 For the best Stallion Colt under 2 years old, | 10 |
| 5 For the best Brood Mare over 4 years old, | 20 |
| 6 For 2nd " " " " " | 15 |
| 7 For the best Filly over 2 and under 4 years old, | 10 |

Third Class—Matched Horses.

- | | |
|--|------|
| 1 For the best pair of matched Carriage Horses, | \$25 |
| 2 For the best pair of matched Horses raised in the State, | 25 |
| 3 For the 2nd best pair of matched Horses raised in the State, | 20 |

Fourth Class—Single Harness and Saddle Horses.

- | | |
|--|------|
| 1 For the best single harness Horse (Mare or Gelding.) | \$20 |
| 2 For the best single harness horse raised in the State, | 20 |
| 3 For the 2nd best single harness horse raised in the State, | 15 |
| 4 For the best saddle horse (Mare or Gelding, | 20 |
| 5 " 2nd " " " " | 15 |

In the classifications for Saddle and Harness Horses, individual excellence in form, size, action and disposition, will be regarded as chief points of merit.

*Former communication was not received. We know nothing better.

JACKS AND JENNETTS.

IMPORTED.

For the best Jack with approved certificate,	\$25
For the best Jennett	15

RAISED IN THE STATE.

For the best and largest Jack raised in the State,	25
For the best and largest Jennett raised in the State,	15

MULES.

For the best pair of Mules over 3 years old raised in the State,	\$25
For the 2nd best pair of Mules over 3 years old raised in the State,	15
For the best single Mule raised in the State,	10

SECOND DIVISION.

CATTLE.

First Class.—Derons.

For the best Bull over 3 years old,	\$25
“ 2nd “ “ “ “ “	20
For the best Bull over 2 years and under 3,	20
For the best Bull over 1 year and under 2,	15
For the best Bull Calf,	10
For the best Cow 3 years old and over,	20
For the 2nd best Cow 3 years old and over,	15
For the best Cow over 2 years and under 3,	15
For the best Heifer Calf,	10

The same classification adopted, and the same premiums offered for Durhams, Ayrshires, Alderley's and Herefords.

GRADES OR MIXED BLOOD AND NATIVE CATTLE.

For the best Bull over 3 years old,	\$20
For the best Bull under 3 years old,	15
For the best Cow under 3 years old,	12

WORKING OXEN.

For the best pair of Work Oxen,	\$20
For the 2nd best pair of Work Oxen,	10
In this class, size, action and docility will be regarded as chief points of merit.	

FAT CATTLE.

For the best lot of fat cattle, not less than 3,	\$15
For the best single fat Ox, Cow or spayed Heifer,	7

MILCH COWS.

For the best Milch Cow, giving not less than 20 quarts,	\$15
For the 2nd best Milch Cow, giving not less than 20 quarts,	10

Quality as well as quantity to be taken into consideration to determine the best cow, and the length of time the cow will give milk, escutcheon marks, &c. &c.

THIRD DIVISION.

SHEEP.

<i>1st Class.—Merino, Cotswold and Southdowns.</i>	
For the best Buck,	\$20
For the best pen of Ewes, not less than 3,	15
For the best pen of Lambs, not less than 3,	10

NATIVES AND GRADES.

1 For the best pen of fat Wethers, not less than 3,	\$10
---	------

GOATS.

1 For the best pair of Cashmere Goats,	\$15
2 For the best milking Goat, any kind,	3

FOURTH DIVISION.

SWINE—LARGE BREED.

1 For the best Boar over 1 year old,	\$15
2 For the best Breeding Sow over 1 year old,	10
3 For the best Breeding Sow with not less than 6 pigs,	15
4 For the best lot of pigs, not less than six, under ten months old,	6

This class includes Berkshires, Leicestershires, Chesters, Woburns, Graziers and Kenilworths.

Second Class.—Small Breed.

1 For the best Boar over one year old,	\$15
2 For the best Breeding Sow over 1 year old,	10
3 “ “ “ “ “ “	“
and not less than six pigs,	15
4 For the best lot of not less than six pigs under ten months old,	6

This class includes Suffolks, Essex, Neapolitan, Chinese, Guinea and Snap Dragons, and will be regarded chiefly for their fattening qualities.

Third Class.—Natives.

1 For the best Boar over 2 years old,	\$15
2 For the best Breeding Sow two years old, and not less than six pigs,	15
3 For the best lot of pigs not less than six, nor under eight months old,	6

POULTRY.

1 For the best pair of Shanghais,	\$3
2 “ “ “ “ “ “	3
3 “ “ “ “ “ “	3
4 “ “ “ “ “ “	3
5 “ “ “ “ “ “	3
6 “ “ “ “ “ “	3
7 “ “ “ “ “ “	3
8 “ “ “ “ “ “	3
9 “ “ “ “ “ “	3
10 “ “ “ “ “ “	3
11 “ “ “ “ “ “	3
12 “ “ “ “ “ “	3
13 “ “ “ “ “ “	3
14 “ “ “ “ “ “	3
15 “ “ “ “ “ “	3
16 “ “ “ “ “ “	3
17 “ “ “ “ “ “	3
18 “ the handsomest Pea Fowl,	3
19 “ the best half dozen Guinea Fowls,	3
20 “ the best and largest exhibition of Poultry by one exhibitor,	10
21 “ the best exhibition of Pigeons,	5

Branch 2d—Agriculture.*First Class.—Field Crops (In the State.)*

To be awarded by the Executive Committee, at a meeting to be held for that purpose in January next.

- | | | | |
|---|------|---|----|
| 1 For the best crop of Wheat of not less than 50 acres, nor less than 30 bushels per acre, | \$50 | 25 For the best crop of Beets, not less than $\frac{1}{2}$ acre, nor less than 400 bushels per acre, | 10 |
| 2 For the best crop of Wheat, not less than 5 acres, nor less than 40 bushels per acre, | 40 | 26 For the best crop of Carrots, (with same conditions for beets.) | 10 |
| 3 For the 2nd best crop of Wheat, not less than 5 acres, | 25 | 27 For the best crop of Tobacco, combining quantity and quality, not less than 100,000 hills, samples of not less than 2 lbs. of 1st, 2nd and 3rd qualities to be furnished the Committee by the 1st of January 1857, | 50 |
| 4 For the best crop of Indian Corn, not less than 50 acres, nor less than 30 bushels per acre, | 50 | 28 For the best 16,000 hills of Tobacco, with same conditions, | 25 |
| 5 For the best crop of Indian Corn, not less than 5 acres of reclaimed or improved land, to be shelled and weighed between the 15th of Nov. and the 15th of December, not less than 100 bushels per acre, | 25 | 29 For the best crop of one-fourth acre of Hops, with a full account of cultivation, and preservation, | 15 |
| 6 For the 2nd best do do do not less than 75 bushels per acre, | 20 | 30 For the best crop of $\frac{1}{4}$ acre of Flax, with same account as above, | 15 |
| 7 For the best crop of Barley, not less than 1 acre nor less than 50 bushels per acre, | 10 | <i>Statements to be made by competitors on Field Crops.</i> | |
| 8 For the best crop of Rye, not less than 10 acres, nor less than 20 bushels per acre, | 20 | 1. The land must be measured, by some competent person, who shall make affidavit of the accuracy of the measurement, and the quantity of the ground. | |
| 9 For the best crop of Oats, not less than 10 acres, nor less than 40 bushels per acre, | 20 | 2. The applicant shall make affidavit, according to the forms annexed, to the quantity of grain raised on the ground, entered on the premium list, which affidavit must accompany the application for premiums, together with a sample of the grain or other product. | |
| 10 For the best crop of Buckwheat, not less than 2 acres, nor less than 30 bushels per acre, | 10 | 3. The principal object of the Society being to promote profitable cultivation, it does not offer premiums for crops produced by extravagant expenditure; therefore, a detailed certified account of the expenses of cultivation, must be made; the expense of labor and manures stated; and the kind of manure used. | |
| 11 For the best crop of Rice, not less than 50 acres, nor less than 50 per bushels per acre, | 50 | 4. The kind and condition of the soil; the quantity and kind of seed used; the time and mode of planting or sowing stated. Samples of grain and vegetables produced, to be exhibited at the State Fair, where practicable, and also to be sent to the Executive Committee at Raleigh; prior to the meeting of the Committee in January, 1857. | |
| 12 For the best crop of Rice, not less than 5 acres, and not less than 75 bushels per acre, | 25 | 5. The grain must either be weighed or measured in a legal half bushel; corn to be measured in the ear, and an average specimen of not less than four barrels of average quality of ears shelled, cleaned, and weighed or measured, as above, after the 15th of November, and the number of bushels thus estimated, stated in the affidavit. | |
| 13 For the best crop of Peas not less than 5 acres, nor less than 25 bushels per acre, | 20 | FORM OF AN AFFIDAVIT. | |
| 14 For the best crop of Peas on 1 acre, not less than 30 bushels per acre, | 10 | —— County, S. S. — A. B., being duly sworn, says he accurately measured the land upon which C. D. raised a crop of —— the past season, and the quantity of the land is —— acres and no more. | |
| 15 For the best acre of Beans, not less than 75 bushels, | 20 | [Signed] A. B. | |
| 16 For the best crop of Ground Peas, not less than 1 acre, nor less than 75 bushels per acre, | 20 | Sworn to before me, this —— day of —— 185— | |
| 17 For the best crop of Cotton on not less than 50 acres, nor less than 1250 lbs. per acre, | 50 | —— County, S. S. — C. C., being sworn, says he raised a crop of —— the past season upon the land measured by A. B., and that the quantity of grain raised thereon was —— bushels and no more, (or measured in a sealed half bushel as the case | |
| 18 For the best crop of Cotton oil not less than 5 acres, nor less than 1600 lbs. per acre, | 25 | | |
| 19 For the best crop of Timothy, Orchard Grass, Blue Grass, Feather Grass, or Herds Grass Hay, raised on 25 acres, one bale sent as a sample, | 25 | | |
| 20 For the best 4 acres of Hay, not less than 2½ tons to the acre, | 15 | | |
| 21 For the best crop of Sweet Potatoes, on not less than one acre, nor less than 300 bushels per acre, | 15 | | |
| 22 For the best crop of Irish Potatoes, not less than $\frac{1}{2}$ acre, nor less than 300 bushels per acre, | 15 | | |
| 23 For the best crop of Turnips, not less than $\frac{1}{2}$ acre, nor less than 500 bushels per acre, | 15 | | |
| 24 For the best crop of Turnips, not less than 2 acres, | 15 | | |

may be,) and that the statements in regard to the manner of cultivation, &c., are correct, to the best of my knowledge.

[Signed] C. D.
Sworn to before me, this — day of —
185—, Justice.

Second Class—Agricultural Productions, Raised by the Exhibitor.

1 For the best variety of Bread Corn, 1 bushel as sample,	\$3
2 Best variety Corn for Stock, 1 bushel as sample,	3
3 do do Wheat, do do	3
4 do do Oats, do do	3
5 do do Rye, do do	3
6 do do Barley, do do	3
7 do do Rice, do do	3
8 do do Field Peas, do do	3
9 do do Ground Peas, do do	5
10 do do Sweet Potatoes, do do	3
11 do do Irish Potatoes, do do	2
12 do do Cotton, 2 stalks as a sample,	3
13 do do Grass Seeds adapted to the South for Hay or Grazing,	5
14 For the best specimen of Cotton, 50 lbs. in seed,	5
15 For the greatest variety of the above articles raised on one farm,	10
16 For the best specimen of Virginia Dip Turpentine, one barrel as a sample,	3
17 For the best specimen of Rosin, one barrel as a sample,	3
18 For the best specimen of Hemp prepared or dressed,	3
19 For the best specimen of Flax, prepared or dressed,	3
20 For the best Maple Sugar,	3
21 For the best Leaf Tobacco, not less than 10 pounds,	3

Third Class—Salt Provisions.

For the best half barrel Pickled or Mess Beef, sample to be cooked,	\$5
For the best $\frac{1}{2}$ barrel Pickled or Mess Pork,	5
For the best dozen Bacon Hams, regardless of age, one to be cooked as a sample,	10
For the best $\frac{1}{2}$ dozen Mutton or Venison Hams,	5
For the best barrel of Roe Herrings,	10
" " " " " Cut "	10
" " " " " Shad or Mullet,	10
Exhibitors must state in writing the mode of curing the Beef and Pork and curing and preserving the Bacon.	

DAIRY.

For best sample of Fresh Butter, not less than 10 pounds,	\$10
For 2nd best sample of fresh Butter, not less than 10 lbs.	5
For best Firkin of Butter, not less than 80 pounds,	10
For 2nd best sample of Firkin Butter, not less than 80 lbs.,	5
For best specimen of Cheese,	5
The process of making and preserving the Butter and Cheese, and its age, must be given in full to the exhibitor.	

FOOD, CONDIMENTS, &c., &c.

1 For best specimen of Wheat Flour, 1 barrel as a sample,	\$10
2 For 2nd best specimen of Wheat Flour, 1 barrel as a sample,	5
3 For best specimen of Corn Meal, $2\frac{1}{2}$ bushels as a sample,	5
4 For best specimen of Buckwheat Flour, $\frac{1}{2}$ barrel as a sample,	5
5 For best specimen of Rye Flour, $\frac{1}{2}$ barrel as a sample,	5
6 For best specimen of Starch from Wheat, Potatoes, &c., 3 lbs. as a sample,	3
7 Best specimen of Wheat bread, 3 loaves,	3
8 2nd best " " " " "	2
9 Best " " " " "	3
10 Best specimen of Honey, half gallon strained, and in comb, 10 lbs.,	3
11 Best specimen of Crackers, soda, butter and water, 10 lbs. each,	5
12 Best specimens of Jellies, Preserves, Pickles, Jams, Catsups, Cordials, &c., &c., each,	3
13 Best specimen of the following dried Fruits, viz: Peaches, Pears, Figs, Apples, of each not less than half bushel; Grapes, Plums, Cherries and Whortleberries of each not less than 10 lbs. as a sample, each,	3
15 Best specimen of Domestic Wine not less than two bottles,	5
16 Best and greatest variety of Domestic Wine, not less than two bottles of each,	10
17 Best specimen of bottled cider, not less than one dozen bottles,	5
18 Best specimen of Linseed, Turpentine, Castor, Cotton Seed, Fennel or any other variety of oil made in the State and prepared by the exhibitor,	3

Fourth Class—Horticulture.

FRUITS ADAPTED TO THE SOUTH.

1 Best and greatest variety of Apples,	\$10
2 " " " Pears,	10
3 " " " Peaches,	10
4 " " " Quinces,	5
5 " " " Figs,	5
6 " " " Grapes,	10

Fruit Trees, &c., adapted to the South.

1 Largest and best variety of Apple Trees,	\$10
2 " " " Pear "	10
3 " " " Peach "	10
4 " " " Strawberry vines,	2
5 " " " Raspberry "	2
6 " " " Gooseberry "	2
7 " " " Cranberry "	2

Vegetables.

1 6 best stalks of Celery,	\$2
2 6 " Cauliflower,	2
3 6 " Broccoli,	2
4 6 " Cabbage,	2
5 2 " Egg Plants,	2
6 " Variety of Squash,	2
7 " Peck of Onions,	2
8 " Sugar Beets, Carrots, Parsnips, and	

	Turnips, $\frac{1}{2}$ dozen of each, for each variety,	2
9	" Pumpkins,	2

Branch 3d—Mechanics.*First Class—Plows.*

1	For the best Side Hill Plow,	\$10
2	" " do. manufactured in the State,	10
3	" " do. double Mould Board,	10
4	" " manufactured in the State,	10
5	" do. 2 horse Plow,	10
6	" do. manufactured in the State,	10
7	" " Wrought Plow,	10
8	" " manufactured in the State,	10
9	" do. 2 horse Plow,	10
10	" " manufactured in the State,	10
11	" " Subsoil Plow,	10
12	" do. manufactured in the State,	10
13	" " Cotton Scraper,	10
14	" do. Sweep,	5
15	" " Toodle! Cultivator,	5
16	" " manufactured in the State,	5
17	" " Harrow,	5
18	" " manufactured in the State,	5
19	" " Horse Rake,	5
20	" " manufactured in the State,	5
21	" " Iron Roller—Smooth,	5
22	" " Roller for crushing clods, wood or iron,	5
23	" " And greatest variety of Agricultural implements, manufactured in the State, by the exhibitor or under his supervision,	25

Second Class—Farm Vehicles, &c.

1	For the best 4 or 6 horse Road Wagon,	\$20
2	" " " " " "	10
3	" " " " " "	5
4	" " " Rigging for hauling hay, fodder or straw,	5
5	" " " Horse Cart. (Dumping,)	5
6	" " " Ox Cart and Yoke	5
7	" " " Wheel Barrow,	2
8	" " " Pair of wagon or plow Hames,	2
9	" " " Cart Saddle,	2
10	" " " 2 horse pleasure Carriage,	25
11	" " " 2nd best do. do.	15
12	" " " Phaeton, Rockaway, Top Buggy, Open Buggy or Sulky, each,	15
13	" " " 2nd best do. do.	10

Third Class—Saddlery, &c.

1	For the best set of Carriage Harness,	\$15
2	" " " Buggy or Sulky harness,	10
3	" " " Gents Saddle, Bridle and Martingale,	10
4	" " " Ladies do do do	5
5	" " " set of 4 horse wagon harness,	5
6	" " " " 2 do do do	5
7	" " " " 1 do do do	3
8	" " " " 1 do, Plow Gear,	2
9	" " " " Cart Harness	3
10	" " " Felt Saddle Cloths,	3

*Fourth Class—Machinery.***STEAM POWER.**

1	For the best Engine, for agricultural purposes at work on the Fair Ground,	\$25
2	For the best Locomotive Engine,	25
3	For the best Railway rolled iron—specimen of 1 ton manufactured in the State,	25
4	For best Pig iron do do	15

HORSE POWER.

1	For the best Sweep Horse Power,	\$20
2	" " " Railway do do	20
3	" " " Saw and Grist Mill and Threshing Machine, each,	20
4	" " best Broadcasting and Drilling Machine for grain or grass seed,	15
5	" " best Broadcasting Machine for sowing bone dust, guano, lime, &c.,	15
6	" " best Ditching Machine,	5
7	" " best Cotton Gin,	20
8	" " best do do manufactured in the State,	20
9	" " best Reaping Machine,	20
10	" " best Mowing do for Grass,	20
11	" " best Hay Press, and Cotton Press and Brick Machine, each,	10
12	" " best Shingle Machine,	10
13	" " best Smt do	10
14	" " best Corn and Cob Crusher,	10

HAND POWER.

1	For the best Fanning Mill, Corn Sheller, Straw and Shuck Cutter, each,	8
2	For the best Corn Planter or Drill,	5
3	" " " Turnip do	5
4	" " " Pump,	5
5	" " " Churn, Sausage Cutter and Stuffer, each,	3
6	" " the best Sewing Machine,	10
7	" " " Grain Cradle,	5
8	" " " do do made in the State,	5
9	" " " Hay Knife for cutting down Hay and Straw Stacks,	3
10	" " the best Hoes for corn and cotton culture, made in the State, each,	2
11	" " the best Hay and Manure Forks made in the State, each,	2
12	" " the best Scythe Snath,	3
13	" " " Vegetable Root Cutter,	5

Fifth Class—Cabinet Work.

1	For the best Bedstead made in the State,	\$5
2	" " " Cradle or Crib for Children,	3
3	" " " Rocking Chair,	3
4	" " " half dozen Sitting Chairs,	3
5	" " " Centre Table,	3
6	" " " Wash Stand,	3
7	" " " Sofa,	5
8	" " " Wardrobe, Sideboard or Bureau,	5
9	" " " Desk, Bookcase, &c.,	5
10	" " " Window Sash and Blinds, each,	5
11	" " " Pannel Door,	5

SHOES, HATS, &c.

1	For the best pair of Gentlemen's Boots,	\$3
2	" " " do do Shoes,	3
3	" " " half dozen pair of Brogans,	3
4	" " " three Dress Hats, Silk or Fur,	3
5	" " " Plantation Hat,	2
6	" " " half dozen Wool Hats,	2
7	" " " Straw or Grass Hats,	3

SUNDRIES.

1 For the best lot of Guns,	\$5
2 " " " " Stone, or Earthen Ware, each,	5
3 For the best lot of Cast (hollow) Ware, Pots, Kettles, &c.,	5
4 For the best lot of Woodware (hollow) as buckets, Tubs or Pails, Keelers, &c.,	5
5 For the best lot of Casks, Barrels, &c.,	5
6 " " " " Leather, Sole, Kip and Calf, each,	5
7 " the best Side of Harness Leather,	5
8 " the best dressed Buck, Sheep or Goat Skins,	5
10 " the greatest variety of Edged Tools, Augers, &c.,	15
11 " the greatest variety of Mechanics' Tools made in the State,	15
12 For the 2nd best and greatest variety of Mechanics' Tools made in the State,	10
13 Best lot of manufactured Tobacco—chewing,	10
14 " lot of Smoking Tobacco,	3
15 " Box of Cigars,	5
16 " Tallow Candles, 25 lbs. with process of making,	5
17 " lot of Soap, 30 lbs. with process of making,	3
18 For specimen of Toilet and Shaving Soap, with process of making,	3
19 For best Barrel of N. C. Lime,	5
20 For best set of Knives and Forks manufactured in the State,	5
21 For the best Buckskin,	5

Branch Fourth—Manufactures.

First Class—Mill Fabrics.

1 Best piece not less than 15 yds. Cassimere,	\$15
2 " " " " " " Satinette,	10
3 " " " " " " Woolen Jeans,	10
4 " " " " " " Linsey or Kersey for Negro Clothing,	15
5 " piece not less than 15 yards Flannel, plain and twilled,	10
6 Best pair of Blankets,	10
7 Best piece 24 yards Woolen Carpet,	10
8 Best Hearth Rug,	3
9 Best piece of Shirting and Sheetting,	10
10 " piece of Bed Ticking,	5
11 " piece of Cotton Jeans,	10
12 " Bale Cotton yarns all numbers,	10
13 " lot Cotton Twine,	3
14 " lot Paper, printing, letter, cap, &c.,	3
15 " Coil of Rope, Hemp or Cotton,	5
16 " Mattress, Hair, Moss, Shuck or Cotton,	10

Second Class—Household Fabrics.

1 Best Counterpane,	\$3
2 " Bed quilt, (cotton,)	5
3 " do do Silk,	5
4 " Comfort, cotton,	3
5 " Home-made Carpet,	10
6 " Hearth Rug,	6
7 2nd best Hearth Rug,	4
8 Best pair Yarn Hose,	2
9 2nd best pair Yarn Hose,	1
10 Best pair Home-made silk Hose,	3
11 " Woolen Shawl,	3
12 " Foot Mat,	2
13 " piece 18 yards negro Woolen Cloth,	10
14 " piece 18 yards Rag Carpet,	5
15 " Knit Counterpane,	5

DISCRETIONARY PREMIUMS.

Will be awarded for contributions to Floral Hall. Works of art and taste, needle work, paintings, drawings, &c., &c.

Branch 5th.—Experiments & Essays

EXPERIMENTS.

For each of the two best experiments, or series of experiments, on any of the following subjects, a premium, as follows:

1. Effects (in profit or loss) of the usual mode of saving corn fodder, by stripping the green blades and cutting off the tops, \$10
2. Cost and effects of sub-soil plowing under different circumstances of soil and sub-soil, 10
3. Action or non-action of lime as manure, above the falls of the tide-water rivers. 10
4. Action or non-action of gypsum below the falls of the tide-water rivers, and on soils respectively rich and originally poor, and on the latter, after as well as before their being made calcareous, 10
5. Cost and effects of bone dust, (or phosphate of lime,) as manure, 10
6. How late in reference to the growth, the last tillage (by plow or cultivator,) should be given to corn for the best product; and whether the said last tillage should be shallow or deep, 5
7. Best series of comparative experiments in the cultivation of corn, 10
8. Benefits and products of guano, compared to costs; to be tested by not less than three different experiments, made under circumstances more or less different, 10
9. Benefits or profits of preserving or applying human excrements as manure, whether prepared for sale and distant transportation, or otherwise, but the whole operation to be in North Carolina, 10
10. Tide marsh mud, or swamp muck, or peaty soil, (either kind to be accurately described and characterized,) as manure, in comparison with lime or otherwise, 10
11. Value of charcoal as an aid to fertility, 5
12. Value of sulphate of barytes as a manure, especially for clover, 5
13. Tobacco.—Culture, cost and profits of cultivating, and comparative effects on production, from different distances of planting, modes of pruning, topping, &c., comprising at least three different experiments, 10
14. Cultivation and comparative feeding value of rye. 5
15. Planting, culture, pruning and supporting in open vineyards different varieties of grape vines for the table, or making of Wine, 10

ESSAYS OR WRITTEN COMMUNICATIONS.

For each of the best five on any of the following subjects, a premium, as follows:

1. On improving and enriching poor land—whether naturally poor, or naturally rich, or good, and subsequently exhausted by severe cropping, \$5
2. On draining, 5
3. On rotation of crops, 5
4. On the accumulation, preparation and application of stock yard and stable manure, 19

5. On the formation and constituents of composts and the application of them,

6. On the "green sand" or gypseous earth of lower North Carolina as manure—and the facts and causes of effect or non-effect.

7. On the properties and value of the Southern Pea (or "cornfield pea" of any variety,) and the culture thereof, whether for saving the pea ripened, or plowing under the growth, green or dry, for manure, and as a preparation for wheat or other grain crops, and as food for swine and other stock,

8. On the comparative profit of planting and farming, and of the two combined—improvement of land being considered,

MINERALS, &c.

1. For the best collection of useful Minerals of the State, including Coals, Iron Ore, Copper Ore, Limestones, Marbles, Sandstones, Marls, Peats, Soils, &c., discretionary premium.

REGULATIONS.

1. All members of the N. C. State Agricultural Society will be furnished with a badge of membership, upon payment of the annual tax of \$2, and will be required to wear the same during the Fair. This badge will admit the ladies of his family and children under 18 years of age, during the Fair.

2. Members of the Society and families alone will be admitted on Tuesday, the day for examination and awards by the judges. All competitors are expected to be present. The public will be admitted on and after Wednesday, at 10 o'clock. Price of admission 25 cents. Children and servants 12½ cents. Clergymen, Editors and Pupils of Charitable Institutions admitted free.

3. Agricultural Societies and Institutions from other States are invited to send Delegates. Such Delegates will be presented with a complimentary card.

4. All Exhibitors who intend to compete for the premiums of the Society, must become members of the same, and have their articles on the ground and entered at the Secretary's Office in Reception Hall, at or before 5 o'clock on Monday evening, Oct. 13th, without fail, so that they may be arranged in their respective departments, and in readiness for examination by the Judges on Tuesday morning at 10 o'clock.

5. The regulations of the Society must be strictly observed by exhibitors, otherwise the Society will not be responsible for the omission of any article or animal not entered upon its rules.

6. No article or animal entered for a premium can be removed or taken away before the close of the exhibition. No premium will be paid on articles or animals removed in violation of this rule.

7. All articles and animals entered for exhibition must have cards attached with the number as entered at the Secretary's Office; and exhibitors in all cases must obtain their cards previous to placing their articles or animals on the Fair grounds.

8. Those who wish to offer animals or articles for sale during the Fair must notify the Secretary of such intention at the time of entry.

9. The Executive Committee will employ a day and night guard, and will use all reasonable precaution in their power, for the safe preservation of all articles and stock on exhibition, but will not be responsible for loss or damage that may occur.—Exhibitors must give attention to their articles or animals during the Fair, and at the close of the exhibition attend to their removal.

10. The awarding committee or judges selected for the next Fair, are earnestly requested to report themselves to the Chairman of the Executive Committee at Reception Hall, upon the grounds of the Society, on Tuesday morning, the 14th day of October, 1856.

11. In no case can the judges award special or discretionary premiums; but will recommend to the Executive Committee any articles in their class which they may deem worthy of special notice and for which a premium has not been offered.

12. The judges on animals will have regard to the symmetry, early maturing, thorough breeding, and characteristics of the breeds which they judge. They will make proper allowances for the age, feeding and condition of the animals, especially in the breeding classes, and will not give encouragement to over-fed animals.

13. No stock of inferior quality will be admitted within the grounds; a committee will be appointed to rule out all below a medium grade.

14. Animals to which premiums have been awarded must be paraded around the track, that visitors may see the prize animals.

15. No person will be allowed to interfere with the judges during their adjudications.

16. The several Superintending Committees will give particular direction to all articles in their departments, and see that all are arranged in the best order possible to lessen and facilitate the labors of the judges in their examination.

17. The Superintendents will attend each set of judges in their respective departments and point out the different articles or animals to be examined, will attach prize cards to the articles, or flags to the successful animals after the judges' reports have been made up and delivered to the Chairman of the Executive Committee.

18. The judges will withhold premiums on animals or articles in their opinion not worthy; though there be no competition.

19. Premiums of \$25, and upwards, will be awarded in *Plate*, unless the person to whom the award is made shall prefer the payment in money.

20. Stock brought to the Fair for sale, will have an enclosed lot adjoining the Fair grounds assigned them, with water convenient, where they can be kept at the expense of the owner.

21. Articles manufactured in the State, when brought in competition with foreign articles will take precedence, other things being equal, and the foreign article be entitled to a second premium.

22. Articles not enumerated will be entitled to discretionary premiums at the option of the Executive Committee.

23. The Chief Marshal, with efficient aids, will be in attendance during the hours of exhibition to keep proper order.

24. No exhibitor will be permitted to enter more than one animal in each of the sub-classes.

25. Animals, when duly entered, are well provided for by the Society, without charge to the owner, and cannot be removed from the ground, except by permission of the Executive Committee.

26. All machines, implements, or other products of mechanical art, must be exhibited by their respective makers, or inventors, or improvers, or their assignors, to or for whom only premiums for such articles will be awarded.

27. Every machine or implement offered for a premium, must be so designated or described as will serve to identify it to future purchasers, and also the selling price of the article must be stated and marked on the labels and in the published reports of premium articles.

28. Efficiency, cheapness and durability will be regarded as chief excellencies in every machine or implement.

29. The Chief Marshal will call the judges at 10 o'clock on Tuesday morning—assemble them at his tent on the grounds—furnish them with the printed list of premiums, also with blank books in which to register their awards, and have the judges conducted by the assistant marshals to their respective departments of the exhibition.

30. The Marshal and his aids shall give particular attention to the proper management of all articles exhibited in their respective departments;—point out the articles or animals to the judges, and otherwise facilitate the examination by the judges.

31. The track will be open for the trial of harness and saddle horses every day during the Fair.

32. A band of music will be in attendance each day, during the hours of exhibition.

33. An efficient police will take charge of the grounds during the night.

THOS. RUFFIN, *Chairman Ex. Com.*

JNO. C. PARTIDGE, *Secretary.*

THE WEATHER.

The weather has been colder and ruder since the 5th of January, than "the oldest inhabitant" ever witnessed before in this climate. We then had hail, and snow and ice, which was renewed on the 11th, and the ground has been well whitened with the snow up to this (26th) day, and it is still cold enough to make a Swede or a Russian shiver. The Thermometer has been, repeatedly, in our passage, in the middle of the day—29 degrees below freezing point. The snow here has been 4 or 5 inches deep, and in our mountain country 2 or 3 feet.—The whole country has been visited by this extraordinary weather. A letter from Texas, dated Houston, 5th January, says, "the weather here has been unusually severe—worse than for seven or eight years. The fig bushes and orange trees are all killed, and so are the oleanders and olives. These form the principal portion of the shrubbery of Galveston, and consequently the island is almost bereft of verdure. It is a pity to see their

fine groves or orchards of orange trees hanging full of golden fruit, all blasted and destroyed by this untimely frost." The ice on the Niagara river is said to be 20 to 30 feet thick. People are, of course, philosophising about the cause of this intense cold and severity of weather; but we have heard nothing more reasonable than the wagish suggestion that it comes from Dr. Kane and his party, when they left the North Pole, having left the back door open. But whatever may be the cause, all admit the snow and freezes, to have a very useful effect in finely pulverizing the soil, and preparing it for fruitfulness. Good crops are always said to follow hard freezing or snowy winters—teaching the plowman the important lesson, that he should always do his work thoroughly, break deep and finely pulverize the earth. Sometimes, it requires cross-plowing and harrowing to do this.

JAN. 26.—A considerable fall of snow and some sleet again on the night of the 26th, and some on the 27th.

We have received a letter from B. F. LUNS, Esq., Corresponding Secretary of the Davie Agricultural Society, containing valuable information, which we shall present to the public in our next number. We thank Mr. L. for this interesting communication, and earnestly request of the Secretaries of all the county Societies to furnish similar communications, giving statistical information, at their earliest convenience.

THE WAY TO MAKE CORN.

We have much pleasure in presenting to our readers the rejoined prompt and interesting response to our request, by Mr. GEO. WILSON, a very intelligent and enterprising farmer, of Davie County, giving a detailed account of his method of producing, last year, 1403 bushels of corn on one acre, &c. Now that the spirit of improvement is abroad, and many are anxiously enquiring for practical knowledge, for successful experiments, and the best means of producing large crops and permanently improving their lands, the highly valuable and encouraging information here furnished, cannot fail to be read with interest and profit in every part of the State. The true secret of success, which it reveals, will be found in a *liberal and judicious application of manure, and thorough preparation of the ground before planting.*—Farmers of North Carolina! READ AND PRACTICE!

For the Arator.

DAVIE CO., N. C., December 29th, 1855.

DEAR ARATOR: I have seen your request, that I would give a detailed account of the land, manure, and cultivation of my premium acre of corn; with which I proceed cheerfully to comply, for I am tired of answering questions on that subject.

My land was surveyed; it is high, grey, post-oak land, except one-fifth of the acre, which was stiff clay land; the land was supposed to be capable of producing 8 or 10 bushels of corn. In November and December I penned 20 head of cattle on it, contouring it up one foot apart, to prevent the manure

from washing off. In January and 1st February, I put on 52 two horse loads of real good stable manure. I then plowed it up with two horses, harrowed it over and bedded it up in 3 foot ridges, plowing about 7 or 8 inches deep. I then hauled on 180 loads of rich earth from the creek or bottom, throwing it in heaps. In March, I put on 60 bushels of ashes, principally leached. 1st of April, I scattered the rich earth over it, and put on 9½ bushels of salt; then harrowed it crosswise; then plowed it up with a large yoke of oxen, and sub-soiling to a depth of 15 inches; then harrowed again, and plowed again with bull tongue and one horse; then about the 20th of April, I run it off in rows 2 feet 10 inches apart, single horse, running twice in the same furrow. I then divided 250 lbs of guano into equal proportions, and applied it with one gallon of ashes, pint of plaster, half gallon of salt, to each row; then I run the sub-soil plow in the furrow to mix it with the earth. After wetting I rubbed my corn in plaster, and dropped it, covering with the cultivator (or two teeth of it.) I also applied two large loads of sand to the clay soil. When the corn came up, I let it alone for two or three weeks. The cut worm destroyed a great deal of it. I replanted, but had the replants all cut out, the growth being so rapid they were choked out.

Cultivation.—I harrowed it over, thinned and cut out weeds; then, when it got up about 14 or 15 inches high, I plowed it with the sub-soil plow, leaving the earth level, cutting out a little grass, &c. It was then laid by, and no grass or weeds grew on it. I intended to have it 12 inches apart, but there were blanks from the cut worm, 3 feet, and some even more. It did not fire, remained green until late. I gathered it 20th October, had it measured, and counting three pecks of rotten or unsound corn, I made 146½ bushels.

I will now give my opinion as to cost of manure, cultivation, &c.

To hauling 52 loads of manure at \$1.50 per day,	\$7.50
To hauling 180 loads of dirt, 1.50 per day,	18.00
Ashes,	50
Application of salt,	50
Guano and plaster,	8.50
All the plowing and harrowing would be worth as much as plowing the ground over seven times, 1.00 per acre,	7.00
Pulling, hauling, and husking corn,	4.50
	\$46.50
By 146 bushels of corn, at 50cts,	\$33.00
Balance,	\$36.50

If I charge for the manure, salt, &c., I would be entitled to credit for the improvement on the land.

My manure, salt, ashes, guano and plaster, and cultivation, cost me about \$19; then the value of the land is raised from \$3 to 45 or \$50.

This statement may differ in some minor parts from others I have made, as I have mislaid some notes in regard to expense; but it is accurate enough for all practical purposes, and I am sure is high enough.

Respectfully,
GEO. WILLSON.

ANOTHER.

I had one acre run off in the bottom, on Hunting creek, on which I applied 250 lbs of guano, plowed the land in all four times, put the guano in drills,

and laid off my rows two feet 8 inches. It was overflowed for 18 hours, when up two weeks high, left too thick in the drill; but it made 153 bushels. I claim no credit for it, for the same ground produced 97 bushels the year previous without any cultivation, after planting. The soil is from 2 to 4 feet deep.

In my first acre I charge for the guano, as I suppose it does not benefit the land after the first year.

I recapitulate all the items separately: Manure, 52 loads; dirt, 180; ashes, 60 bushels; plaster, 1 bushel; salt, 11½ bushels; guano, 250lbs.

GEO. W.

THE SATURDAY EVENING POST.

ESTABLISHED AUGUST 4, 1821.

Weekly Edition between, 80,000 and 90,000.

IN issuing their Prospectus for 1856, the proprietors of the Post take it for granted, that the public are already tolerably well acquainted with the character of a paper that has grown strong during the storms and sunshine of THIRTY-FOUR YEARS. Their object always has been, as it remains to be, to publish a weekly paper for the family circle, which shall not only amuse, but also instruct and improve, those who read it. To accomplish this object, the best articles are selected or condensed from foreign and domestic periodicals, and original articles of an instructive character procured, when possible.

Letters from foreign lands; the most interesting portions of the Weekly News of the World;—Sketches of Life, Adventure and Character; Selected and Original Articles upon Agriculture;—Account of the Produce and Stock Markets; and a Bank Note List are included among the solid information to be constantly found in the Post.

But the mind requires a wider range—it has faculties which delight in the humorous and lively, the imaginative and poetical. These faculties also must have their appropriate food, else they become enfeebled, and, as a consequence, the intellect becomes narrow and one-sided, and is not able to take an enlarged and generous view of human nature and its destiny. To satisfy these heaven-implanted cravings of our mental being, we devote a fair proportion of the Post, to *Fiction, Poetry and Humor.*

Among our contributors in the first two of the above Departments, are several of the most gifted writers in the land. We also draw freely for Fiction and Poetry upon the best periodicals in this country and Great Britain. We design commencing a New Story by Mrs. SOUTHWORTH, author of "The Deseried Wife," "Miriam," &c., in our first paper of January next.

ENGRAVINGS, illustrative of Important places and actions, of Agricultural and other new Inventions, with others of a Humorous, though of a refined character, are also freely given.

The postage on the Post to any part of the United States, paid quarterly or yearly in advance, at the office where it is received, is 26 cents a year.

TERMS—CASH IN ADVANCE.


Single copy,	\$2.60 a year.
4 copies,	5.00 "


8	"	(And 1 to getter-up of Club.)	10,00	"
13	"	" 1	"	15,00
20	"	" 1	"	20,00

Address, always post-paid

DEACON & PETERSON,

No. 66 South Third Street, Philadelphia.

 **SAMPLE NUMBERS** sent gratis to any one when requested.

 We annex a few Notices of the Post from its Exchanges:—

THIS is one of the few large papers filled with life and thought, instead of lumbering trash. Its management is marked by liberality, courtesy, ability, and tact. It employs the best literary talent, and spares no pains or expense. As a family paper, one of literary and general intelligence, we cordially commend it.—*Cuyaga Chief, Auburn, N. Y.*

In another column is an advertisement of the Saturday Evening Post. Our readers may rely upon it, that Deacon & Peterson will be as good as their word. So far as we can judge by years of observation, these publishers do rather more than they promise; and their paper is edited with very marked ability. It is singularly free from silly sentimentalism and bluster, but is of a healthy tone on all subjects, always moderate in language, but always mildly advocating the right.—We find it one of the most generally attractive papers in our exchange.—*Saturday Visitor, Pittsburg, Pa.*

We have heretofore spoken in high terms of the merits of the Post, as one of the best papers on our exchange list, and we regard it as one of the best literary papers to be found anywhere. Its editorials are written with ability, and take a liberal, independent, and comprehensive view of men and things.—*Star and Ad., Wrightsville, Pa.*

It is a paper of the largest size, and is edited with ability. It is highly spoken of by its readers, some of whom have clung to it for the last quarter of a century. It is too well and favorably known to need lengthy commendation. It tells its own story each week, and if you send for it once, you will be very sure to do so again.—*Valley Times, Cedar Rapids, Iowa.*

It is deservedly one of the most popular public journals in the United States, combining as it does, in a literary point of view, all the interest of the best magazines, with a vast amount of general intelligence.—*Republican, Litchfield, Ct.*

It is emphatically one of the very best literary newspapers in the whole country, and deserves the unparalleled success with which it has met under its present enlightened and liberal proprietorship. The greater its circulation in this State, the less, probably, is our gain pecuniarily; yet we must pronounce it a most excellent journal, and worthy of the patronage of everybody. The contributors to the Post are among the finest writers in America, and the editor's articles are always characterized by truth and taste.—*Jersey Blue, Camden, N. Y.*

We regard it as the best of the Philadelphia literary papers. Its editorials are written with

ability, and take a comprehensive view of whatever is discussed.—*Echo, Johnstown, Pa.*

The long period during which this sterling paper has been established, and its recent immense circulation, (being between 80,000 and 90,000,) are ample guarantees to all who desire an excellent paper, that they will get the worth of their money by subscribing for the Post.—*Clarion, Lockhart, Texas.*

This is one of the best family papers upon our exchange list. Its original and well selected matter is of the first order.—*North-Western Democrat, Minneapolis, Min. Ter.*

The editorial department is conducted with ability and skill, and the news department, for a weekly paper, is exceedingly full and complete. All things considered, the Post is not excelled, for family reading, by any paper that we know of.—*Gazette, Fulton, N. Y.*

This is one of the oldest weekly papers in Philadelphia. It has lived on through all weathers—adversity has tossed it, and prosperity filled its sails—and yet it is the same staunch barque.—*Spectator, Opawka, Ill.*

We are in weekly receipt of this invaluable family journal, and should feel very much at a loss without it, as we consider it the best literary paper now published in the United States, without any exceptions.—*Democrat, Cambridge, Md.*

February 1st.

46.

MELON SEED.

LAST YEAR was notorious for the quantity and quality of that luscious Southern fruit, Water and Musk Melons, in this section. Those who visited Wilmington, know something about it. Melons have been raised here weighing from 35 to 50 odd lbs.—the large kind of Carolina Melons. We have some of the seed of these melons (both kinds) to spare, and will forward to persons wanting for \$1 per pint. Address C. H. ALEXANDER, Topsail Sound, New Hanover Co., N. C., Dec. 31st, 1855. 11—36

HENRY PORTER'S

SHOE AND BOOT ESTABLISHMENT.

THE SUBSCRIBER has, and will continue to keep on hand, at his stand on the West Side of Fayetteville Street, an extensive and choice assortment of—

BOOTS AND SHOES,

suitable for Ladies, Misses, Gentlemen, Boys and Servants, of every description and for all seasons; to which he respectfully invites the attention of purchasers, promising a good article on as good terms as can be afforded anywhere in this Market.

He also keeps first-rate workmen, and will mend or make Shoes or Boots to order, in the very best style.

He will likewise furnish the trade with materials at moderate rates. Everything warranted.

HENRY PORTER.

Raleigh, Dec., 1855.

9—36.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills; Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4-11

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers' prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES:

Raleigh, March 1, 1855.

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF Theological, Law, Medical, Classical, Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including Records for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 25, 1855.

1-2

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles, VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE, French, English and American Perfumery, Fine Toilet and Shaving Soaps,

Five Tooth and Hair Brushes, Paint Brushes, SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds, Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day, SUPERIOR INKS:

Pure Wines and Brandies for Medicinal Purposes, Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-11.

JOB WORK executed with neatness and dispatch at this office.

CONTENTS OF FEBRUARY NO.

Accidents,	334
Chemistry of Manures,	321
Cattle, care of,	328
Cane Grass, destitution of,	342
Corn, the way to make,	349
Communication from Mr. Linn,	349
Deep Land Culture,	323
Drowned persons, Treatment of,	335
Ditching. Hill-Side,	341
Flowers,	330
Fruit Trees,	332
Fair, Preparations for,	241
Health,	333
Manure, Long in the Fall,	328
Maxims, Diabetic,	333
Plants,	331
Potatoes, enemy of,	337
Periodicals, notices of,	340
Premium List,	342
Tobacco, Cultivation of,	325
Vegetables, origin of,	328
Vegetables, when to sow, &c.,	329
Vines,	331
Weather,	349

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS HUNDRED ARTS.

VOL. I.

RALEIGH, MARCH, 1856.

NO. XII.

NORTH-CAROLINA ARATOR.

BY THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, ONE DOLLAR A YEAR, *in advance*, or \$1.50 if not paid *til the end of the year*.

Advertisements, not exceeding twelve lines each and every insertion, one dollar—containing ore at the same rates.

TURPENTINE.

hints for those about to engage in its manufacture.

SITUATION.

SELECT your plantation as near a distillery as you can; but you may do a very profitable business six or seven miles off, if the country is favorable for hauling. If the distillery is on a river, turpentine may be hauled two or three miles and stowed down forty or fifty miles, cheaper than to haul to the still over six or seven miles. Yet persons already settled on thin pine lands, can do better to make turpentine and haul it ten or twelve miles, than at anything else they make for market.

TIMBER.

The best trees are young, thriving, on pretty good soil, of quick growth, having the most sapwood. If found on low, level or moist lands, they will yield all the better. Dry seasons are unfavorable for a large crop of turpentine, and, of course, are on lands that suffer easily from drouth, are not profitable. Old yellow pines run badly, and are only worth boxing when standing amidst better timber.

The thicker the growth stands the better, as close forests are less injured by hard winds than those more open, while the land has less ground to walk over in attending his task. Forests that will not afford a task of 12,000 boxes on 200 acres or less, are hardly worth working, unless they are very near the still, or water carriage to it.

BOXING.

As the future profit of the business depends chiefly on doing this part of the work well, let it be carefully attended to, observing the following instructions:

1st. In our climate (Florida and South western Georgia) this work must be done between the 1st of November and the 1st of March, or a little later if the spring is backward and cold, and the turpentine does not begin to run.

2nd. The boxes must be cut *low down*—in small trees within six or eight inches of the ground, and ten or twelve inches in large trees. This will be at the swell of the roots, where the sapwood is deepest, and the tree least weakened by the cut, and because the drip is more certain to fall into the box when it is cut in the projecting wood.—And for this last reason, when the tree is not upright, a box must never be cut on the side to which it leans.

3rd. The box should be from eight to fifteen inches long, measuring across the tree, according to its size. The lower edge or rim of the chop must be a level cut, very smooth, and have a down slope inwards of two or three inches below the

outer edge. The depth from three to four inches, capable of holding a quart or more, unless in a small tree. As a general rule, the cut should extend very little into the heart-wood.

4th. The size of the tree determines the number of boxes it will bear and keep healthy. Trees under a foot thick should have but one box; those from twelve to twenty inches thick, two boxes, and never more than three in any tree. Of course where the trees are scattering it may be better to cut more boxes, even if the trees do not last as long, than to lose too much time with your hands.

5th. The task for prime experienced hands is from 450 to 500 boxes a week, or 75 to 80 a day. And some expert hands will gain a day and do their work well. Such hands should be encouraged by receiving pay for extra work. But most beginners will not cut at first more than 50 boxes a day, and there is nothing gained by tasking them too high, until they have got well used to the proper shape and size of boxes.

CORNERING.

As soon as you stop cutting boxes, the hands should be set to cutting corners to them. This is done by a straight cut four or five inches up the tree from each corner of a box, and is usually done with two blows of the axe, taking out a chip half or three quarters of an inch deep, which makes a channel to catch the turpentine at the corners of the box, and serves as a guide for the chipping afterwards. A hand will corner 500 to 600 boxes a day. The turpentine from the faces and corners of new boxes will fill them, without further work, for your first

DIPPING.

This part of the business generally begins about the 1st of April, a little earlier or later according to the season.

But before proceeding to dip, or even to corner your boxes, each task, where there are no natural boundaries, should be marked off by blazing a line of trees. And every task should be further divided by rows of stakes, fifty yards apart crossing it both ways, from side to side, which will cut it up into squares of about half an acre.—Without this the overseer of several hands cannot possibly inspect their work with any accuracy; nor can the hands, however faithful, avoid skipping a great many boxes in *cornering, chipping* and *dipping*.

1st. Before you begin to dip, place your empty barrels, thirty-five or forty to the task, at convenient distances, all ready to receive the turpentine.

2nd. Each hand will require two buckets, holding four or five gallons, so that while one is dripping into the barrel he can work with the other and lose no time. The implement for dipping is made of iron or steel, something like a trowel, with a wooden handle, the blade flat, six inches wide and nine or ten long, with a rounded point, thin at the edges, and a quarter of an inch thick in the centre, and joining the handle.

3rd. Dipping must commence as soon as the boxes are pretty well filled, charging the hands to watch them while going over their tasks to cut runners or to chip, as trees run very unequally, and many will overflow before the rest are full.

4th. The number of dippings in a season vary from four to seven as the extremes. Below five, during the first two years, is looked on as poor, and six as very good. An early or backward spring or fall—long droughts, during which the trees almost stop running—or heavy driving rains which fill the boxes with water and float out the turpentine—all have their effect on the number of dippings—which depend otherwise on the frequency and care with which chipping is done. As the plantation grows older, and the chipping extends higher up the trees, you get fewer dippings of *soft* turpentine, and a greater proportion of *hard* or *scrape*.

5th. It is not usually necessary to gather the scrape separately, until the second winter, after the boxes stop running. It will then be nearly equal in bulk to two dippings. After that it must be gathered every winter, the bulk increasing the longer the trees are tended.

6th. For collecting the scrape, instead of buckets it is better to use a box 15 or 16 inches square and 10 inches deep, supported on two short legs, so as to rest against the tree. The best implement for gathering scrape is a socket spade, so that the length of handle can be varied with the height of the work. The hard scrape will require to be trodden into the barrels.

7th. A hand should dip 1,800 to 3,000 boxes a day, or fill five or six barrels, so as to get over his task in six or eight days. It will require more time to collect the hard turpentine.

CHIPPING.

Next to careful boxing, the length of time that your trees will continue to yield, will depend upon the manner in which chipping is done.

1st. The instrument used is called a "haeker" or "shave," from its resemblance to a cooper's round shave, only that the cutting part should be shaped to a rounded point an inch or three quar-

ters in diameter, and be supported on a strong spike, to be inserted in a handle of convenient length, according to the height of the chipping.

2nd. Take care that the chip extends across the tree no wider than the box, and for new or awkward hands it will save much waste to have perpendicular lines drawn up the tree from each corner of the box.

3rd. From each of these lines the chip should be cut in a down slope towards the centre of the box. Each fresh chip to be cut at the upper edge of the old one, about a quarter of an inch deep into the wood. A narrow chip or cut will bleed as freely as a wide one—half an inch is sufficient; and by this means your trees can be worked longer. If trees are skilfully chipped they will last eight or ten years.

4th. A good hand will chip over his task once a week. And, as it is important to have it done by the strongest and most expert hands, these should be kept at it regularly through the season—while women or inferior hands can dip very well. One hand can dip four tasks, while the three best hands are kept busy chipping, and should go over the whole four or five times between each dipping.—On this plan the boxes first full can be attended to without interrupting the chippers.

HAULING.

One hand strong enough to load, with a pair of good mules and suitable wagon, will haul the turpentine dipped by ten hands, an average distance of three miles—with spare time for hauling provisions, empty barrels, &c; and in the winter can be employed in hauling barrel staves, plowing in oats, or preparing ground for early peas and potatoes—so as to provide a large part of their own forage for himself and team.

BARRELS.

1st. The barrel is made 32 inches long, including the chimes, and the head about 17 inches across, with a little bulge in the middle. The staves and heading of pine, to be three quarters or seven-eighths of an inch thick, secured with six strong wooden hoops.

2nd. A barrel of turpentine must weigh 280 lbs., and any over or under weight is added or taken off, as the case may be, in calculating all sales. No allowance for weight of barrel.

3rd. A cooper's task, when working by the day or month, is five barrels. His price is twenty-five cents a barrel for making when all materials are found him—and when he finds all, from thirty-one to thirty-seven cents a piece.

4th. Heading and staves of heart pine are worth \$5 a thousand. Sap staves one-fourth less, as they are only fit to hold the hard turpentine or scrape. They should be got out and hacked up and dried two or three months before being worked up.—Hoop poles, about six feet long, of hickory, white oak, or water oak, are worth twenty to twenty-five cents per hundred delivered.

5th. In a gang of hands getting turpentine, every fifth man may be a cooper, and will be employed the year through in providing his own materials and keeping the others supplied with barrels.

GUARDING AGAINST FIRE.

The evil consequences of getting a turpentine plantation on fire, are so great, as to justify the labor of hoeing around the boxes, so as to clear away all the grass and pine straw to a distance of four or five feet. This will employ a hand four or five weeks in the winter. The State ought to protect this important interest by enacting severe penalties against those who set out fire where it can extend among trees boxed for turpentine.

GENERAL REMARKS.

The turpentine business is considered a very healthy employment for hands. It may be carried on with little capital, on lands too poor for cultivation, and is, therefore, well suited to persons of small means. If there is one hand, in the poorest family, able to cut boxes and chip them afterwards, the dipping can be done by women and half-grown children. A poor family living near a still or river may make something, even if they hire the hauling.

On the other hand, no business makes better returns for common labor, take one year with another, not even the culture of cotton and tobacco, especially when the amount of capital employed is taken into consideration. A prime experienced hand, in a plantation newly opened, has gathered \$600 or \$700 worth of turpentine in a year, leaving a nett sum of \$400 or \$500, after all deductions for barrels, hauling, provisions, &c. Two hundred dollars per hand, clear of all expenses, including wages to an overseer, is a very moderate result for an average lot of hands.

The usual price for cutting good boxes is \$1 per hundred, and food for the hand.

Twelve thousand boxes are an average task, in chipping and dipping. Extra prime hands have tended as high as fifteen or sixteen thousand, but ordinary hands will not do justice to more than ten thousand.

Good trees will yield about three barrels to the thousand boxes at each dipping for the first three years, one-sixth of this being *hard* or *scrape* the second year, and one-fifth the third year. The proportion of *scrape* increases as the chipping extends higher up the tree, until it makes half the crop, while the dippings or *soft* turpentine will be reduced to three or even two a year. It will, therefore, be necessary to add some new boxes to the task every year, after the fourth, to keep up the profitable business. In young, thrifty trees, this may be done without increasing the bounds of a task, if the number of boxes was limited at first, as previously directed.

Virgin Dip is the name given to all turpentine gathered the first year from new boxes. The first three dippings make much the brightest and best rosin, and on this account is worth fifty or seventy five cents a barrel more than *yellow dip*, which is the name of all soft turpentine taken from the boxes after the first year.

Hard or *Scrape* is the name for the turpentine which hardens on the face of the chipping and never reaches the boxes. This makes a pretty fair rosin, but yields not more than a third of the quantity of spirits, and is worth about half price.

The evaporation of spirits from all soft turpentine is very rapid in hot, dry weather; and this makes it important to dip and deliver it at the still without unnecessary loss of time.

Virgin dip will yield about five and a half gallons of spirits to the barrel (of 280 pounds, for the first three dippings, and from five and a half to six gallons later in the season.

Yellow dip, if delivered early, will turn out six to six and a half gallons. The scrape rarely makes as much as three gallons, very often not more than two or two and a half to the barrel.

On an average, all kinds will make two barrels of rosin from three of raw turpentine.

The distiller, therefore, will have one-third of his barrels surplus, which, with slight repairs, will serve as well as new ones for future dippings.

When Virgin dip is worth \$2.50 or \$2.75 a barrel, Yellow dip is worth about \$2, and the scrape about \$1.25 a barrel.

To justify the distiller in paying the above prices, spirits of turpentine should be worth 40 cents a gallon in the New Orleans market, upon the supposition that the entire expense from the still does not exceed eight cents a gallon on spirits, and 40 cents a barrel on rosin. When spirits are selling in New Orleans at 36 cents, the raw article is worth 20 cents a barrel less, at the still, at the

same rate of expense in sending the manufactured article to market.

The distiller incurs great expense in the single article of spirit barrels. These must be iron bound, made in the best manner, of seasoned white-oak, and well coated within with glue, to prevent evaporation. They should contain from 40 to 45 gallons, and when ready for use cost little short of \$2 a piece. As there must be one spirit barrel provided to every seven of soft turpentine, the demand for these barrels will of itself open an extensive new branch of business. Let these, by all means, be made at home.

A word more at the close. It is said above that a turpentine plantation will last eight or ten years. This is meant for Florida and Southwestern Georgia. In North Carolina, with careful working, it lasts 12 or 14 years. And then begins the business of making tar from trees exactly prepared for it, by this previous culture. This is nearly as profitable as making turpentine, and will furnish employment for several years longer.

REMARKS.—We are under particular obligations to John M. Potter, Esq., of Decatur County, Ga., for a pamphlet containing the foregoing information. We do not know who is the author, but doubt not the article will be acceptable to many persons seeking information on this important subject.—*Editors Southern Cultivator.*

PRATT'S DITCH DIGGER.

We copy the following account of the above recent invention from the New York Tribune:

Mr. R. C. Pratt, of Canandaigua, patented in July, 1833, a machine for digging ditches, which proved one of the best things exhibited at the late State Fair. By its aid one man and two horses have frequently dug 150 rods of ditch three feet deep in one day, and from 50 to 150 (according to the nature of the soil) is considered a day's work. The machine consists substantially of a scoop and revolving wheel—the scoop scraping and the wheel carrying up the dirt until at a sufficient height it is tumbled out upon the sides, at a little distance from the ditch. Several repetitions of the operation are required before the ditch is sunk to sufficient depth.

The specimen exhibited at the late Fair was all wrought iron, and weighed between 700 and 800 pounds. The diameter of the main wheel was five feet, and the breadth of the diggers or lifters fixed thereon, and that of the scoop or curved channel in which they rise, is about nine inches. Although the lifting apparatus is thus narrow,

is practicable and indeed desirable, to use small plows or cutters which pare the sides somewhat wider, so that a ditch of any width, from nine to fifteen inches, may be excavated by the same machine.

The weight of the dirt which is being lifted, the curved channel, and in fact of the whole machine, rests on the diggers, which, like the floats of a paddle wheel, project from the periphery of the main wheel. As the machine is drawn forward by the horses, the diggers are successively forced into the earth and compel the wheel to rotate—thus throwing up and discharging from the top all the earth caught by the scoop, which is in immediate contact behind. On the extreme rear of the whole is adjusted two cutters or small plows, which pare the sides and tear the earth to a suitable distance below, ready for the next passage of the machine, so that after the first passage the diggers are always pressed down into the ground already loosened, to a depth of from two to ten inches, which loosening may be supposed to regulate the depth to which they will be likely to sink. The wheel and its accompaniments being of considerable weight, great muscular exertion would be required of the attendant to prevent its falling on one side, but for a simple and very effectual provision for its support. The stout iron shaft on which the main wheel freely revolves, is prolonged some two or three feet on each side, and provided with a light carrying wheel mounted loose, as in a common carriage axle, to run upon the ground.—These wheels are to maintain the upright position of the machine; but the weight must, at all times, when in operation, be allowed to rest on the diggers. In short, the main wheel and the whole machine must be allowed to sink down into a ditch, or rise to the surface, while the carrying wheels simply run lightly on the surface at the sides.—

This end is accomplished by bending the axle into the form of a large crank at each side and releasing it from all connection with the machine, except that of passing loosely through the centre. A catch is provided by which the attendant (who is supposed to be grasping a pair of handles in the rear) may make the connection a fixed one at pleasure, and when desiring to leave the field and travel the road the weight may, by this means, be thrown entirely upon the carrying wheels.

It is stated by Raspail, one of the best French chemists, that a solution of aloes, washed over the trunks and branches of trees with a brush, will destroy all vermin on plants and trees.

From the New York Horticultural Review.

THE COMPOST YARD.

It is impossible to carry out good gardening without composts or fresh soil. It signifies little whether the gardens be one acre or fifty, whether they contain one plant-house or a dozen; a compost-yard becomes a necessary adjunct, and deserves the title, although it may contain only two or three kinds in as many cartloads. Ladies and gentlemen who are unacquainted with the practical details of gardening, are apt to wonder why so much fuss should be made about soils; but their wonder would cease could they, for only a couple of years, go through the routine of practical gardening and plant culture. Could what gardeners term the potting-board tell tales, it would reveal many a secret which might astonish those who have not dabbled in composts, manures, drainages, &c.

And this is not all mere empiricism; the first gardeners in the land, from Sir J. Paxton downwards, will bear us out in the absolute necessity that exists for a potting-bench: the latter, of course, of little use without the compost-yard. We think it was Rousseau, or some witty Frenchman, who said that a knave and a fool were made for each other; and truly the same may be said of the potting-shed and the compost-yard.

But the very kitchen garden and the flower garden have their demands on this useful, out-of-the-way place, and we must proceed to show forth a simplified course of practice in regard of soils.—What gardeners term loam is the first in the list of necessary materials. To describe what a good loam is, in the eye of the gardener, is a most difficult affair; good gardeners in this matter are mere rule-of-thumb men; color is not a paramount object—it is more a matter of texture; and we know gardeners who could tell a good loam blind folded, so that the finger and thumb would appear to be pretty good judges in these matters.

To those amateurs, ladies or gentlemen, who, not having experience in gardening affairs, yet desire to acquire such, we would particularly address ourselves, as to this material called "loam." All loams are simply soils composed in the main of sand and clay in various stages; their degree of cohesion at once points to the percentage of the clayey principle—their want of fixity or amount of incoherence pointing alike to the predominance of the sandy principle. Therefore, between the two antipodes, sand and clay, there are innumerable grades.

But, to be off-hand in the matter, let us assume three points in judging a loam. First, a good loam should be almost or quite homogeneous in color; it should be rather adhesive—even when half dry; it should, if possible, contain much organic matter, or, in other words, the remains of by-gone vegetation—the roots of grasses, herbs, or even plants of half shrubby character. As to color, it may be almost yellow, or it may be a dull hazel; these things, although they possess their respective meanings, are but of a secondary import. What we want of loam, in the main, is the quality of adhesiveness or coherence; without which, composts, whatever qualities they may possess in a manurial sense, do not “wear”—to use a technical phrase.

The next soil in point of importance in the compost-yard is peat, as it is commonly called; but, as this term is used with so much laxity, we must offer a few passing remarks. It is a common practice amongst gardeners to talk about bog soil, peat and heath soil, as though they were the same material, or it were immaterial which formed part of the composts; but they are widely different. Heath soil is that dark soil containing much sand—generally one-third its bulk—which is found on upland moor soils, and covered with the common heath or heather. Bog or peat is that dark, fatty material which is dug out of morasses; such, indeed, as is dried and sold for fuel in many parts of the Kingdom, and containing but little sand. This, in a raw state, fresh dug, is said to contain a superabundance of humic acid, which is prejudicial in the culture of plants; it therefore requires to lay some time in the compost-yard, and to be turned occasionally. It is not, however, the proportion of sand they contain which distinguishes them; they are very different as to the mechanical textures; although in both the fibrous portion is simply vegetable matter in various stages of decay. The fibrous portion of the heath soil is, in the main, woody fibre, giving a strong and enduring texture to the compost; that of the peaty soil is chiefly derived from annual or herbaceous vegetables, and is, of course, quicker in action and more liable to perish. Sandy heath soil is by far the safest for choice plants which have to remain long in their pots, whilst the peaty material is adapted to plants of rapid growth and which are destined for a disrooting system, or to be entirely replaced by fresh young stock.

VEGETABLE MOULD.—Although this is not indispensable in the compost-yard, it is of eminent service; still it must be confessed that a gardener

with good loam, sandy heath soil and old manure, can grow any plant in existence well. Vegetable mould is of various kinds, although what the gardener terms leaf-mould is the most popular. But, in truth, when in a highly decomposed state, it signifies little what this humus is derived from;—whether leaves of trees and shrubs, decomposed weeds, or indeed anything that has once been a growing vegetable, water-weed and mosses excepted.

MANURES.—It would seem almost superfluous to recommend manures for the compost-yard, since they are in general the first things thought of. We wish, however, to point in a special way to one or two of importance to the plant-grower, as also to show the best mode of handling them. The old dung from decayed hot-beds is a favorite manure with most gardeners, and very useful it is for general purposes, provided it has been frequently turned, and well handled by the spade. But the most useful manure of all, in our opinion, is very old cowdung. This should be at least twelve months old; in fact, when in proper order for the potting-bench, it should resemble well-humbled peat soil. There are other manures of great power, when high concentration is required; but we pass by them. We may here direct the reader's attention to one great fact: that since the utility of liquid manure has been generally recognized, the gardener feels much less anxious about the introduction of manurial matters into his soil.

Sand is another important affair to add to the compost-yard—indeed, a material we cannot do without. There is scarcely a compost made up by a good gardener, but sand, less or more, finds a place in it. Sand for this purpose should be very sharp, fine and clean.

We have here enumerated a few things which should be in every compost-ground, and we may now be permitted to offer a few remarks pertaining to the general economy of composts.

In the first place, a compost yard must be perfectly dry beneath; no water must lodge here, or the composts will be seriously damaged. Secondly, all soils or composts should at all times be piled up in the form of a sharp ridge, in order to exclude rain, which robs them of their virtues.

The best time, in our opinion, to collect the various soils, &c., is the month of September. The turfy loam in our fields, commons, &c., is then full of the fibrous produce of the past summer, and the soil may be obtained dry if the proper opportunity is sought. By the way, this obtaining soils when in a tolerably dry condition is a point which

we must particularly direct attention to; soils handled in a wet state lose half their character.—For the reasons adduced on behalf of the loams, peats and heath soils are in the best condition at this period; the accumulated summer heats in the soil have in general been more than a match for the aggregate amount of summer rains, and the necessary consequence is an open and porous condition in the soils, highly favorable to the compost gatherer.

Again, then, we say to those who desire to systematise matters, and to keep pace with the age in gardening affairs, lay in your soils in September; be sure they are tolerably dry when handled; pile them in sharp ridges; and where speedy decomposition is the object, as in the case of peats, leaf-soils, &c., turn them frequently. But where there is a reason for making the organic constituents endure as long as possible, and preserve their mechanical texture—as in the case of fibrous loams—then, we say, pile in a ridge, as in the other case, but do not disturb that ridge until the material is required; it will thus, after laying six or eight months, chop down by a sharp spade into the most valuable soil the gardener possesses. In the case of hair-rooted plants, such as the *epacris* family, the *ericas*, &c., of course the good cultivator falls back on his sand heath soil, handled in a similar way.—*English Country Gentleman*.

IMPROVING MEADOWS—MOWING MACHINES.

MANY farmers have objected to using mowing machines the past season because their meadows were not prepared to work them successfully. Well, then, the sooner they pick up the stones, blast the rocks, burn the stumps, cut off the bogs, fill up deep holes, and drain them sufficiently dry for a team to walk over, the better it will be for their interests. Meadows thus prepared yield a large burden and a superior quality of grass. The gain from these improvements alone, will usually more than defray the expense, often quadruple it, in a few years; and this gain is still further increased in the use of the mowing machine.

The grass on a smooth meadow can be cut by a properly-constructed machine at a cost not to exceed 40 to 50 cents per acre. At the average price of help the past two years, it cannot be cut with the scythe at less than \$1 to \$1.50 per acre, and here is saving enough in two seasons to pay for a good machine, for any one who has a hundred acres to cut for himself and neighbors. But the great saving effected with one of these implements consists in *being able to do the work when it is wanted*. Thousands of tons of hay are badly injured, and often almost whol-

ly destroyed, owing to the inability to cut the grass in season, or take advantage of the weather.

The horse hay-rake and the horse pitch-fork are also good labor-saving implements, and greatly facilitate the operations of hay-making, and unload it in the barn.

Mowing machines, *properly constructed*, will operate in rougher ground than any one unacquainted with them would suppose possible. We say *properly constructed*, emphatically, for money invested in a poor machine, is worse than thrown away, when we reckon the time spent in *trying* to operate such implements, and the waste of grass when poorly cut. We have had pretty good opportunities for observing mowing machines the past season, having seen more than a dozen different kinds in operation, yet out of them all, only two or three patents have proved entirely satisfactory. A machine properly constructed will work very well, and with little injury among stones. The large and fast ones it will slide over, while it will pick up the small ones on its strong fingers, and cast them over the board behind. Rocks, stumps and trees can be cut around if the team be properly driven; hassocks and bogs, if not too thick, the machine will jump over, and wet places it will cut any where a team can walk. We have seen many acres of salt meadow cut the past season, when the horses would frequently mire to their knees, and they had to be unharnessed and taken out, and the machine passed over the slough and then harnessed in again. On a side hill we have seen this machine worked admirably either up or down, or obliquely to the pitch of the ground.

The best mowing machines are compact, strong, simple in their construction, so as not to be liable to get out of order; and they should be made to keep their proper position on the roughest and most uneven ground—which is best done by means of a side wheel upon a spring axle.

Another important matter is, that they should do their work equally as well when driven at a slow rate of speed as when driven rapidly. This is a point in which a majority of machines have failed, even when good in other respects.

Several accidents have occurred during the past season, and, other things being equal, those implements are to be preferred which afford the most secure seat for the driver. The leisure season will give an opportunity to examine into the claims of the different implements before the public, and it will be well to take this time to provide for the wants of another summer, when the pressure of other duties will give less opportunity to make a careful selection. *American Agriculturist*.

From the American Agriculturist. THE ROOT CROP.

I have always been of the opinion that farmers were "missing it" by paying so little attention to the raising of roots; and the high price of hay the past winter has impressed this subject on my mind with more force than usual. The high price of stock and the value of anything that will feed or fatten, must be a very strong inducement for the farmer to try raising root crops, and test their value.

There are quite a variety of roots which may be raised with profit, as food for horses, swine, sheep, and neat cattle. I have tried the different varieties of the turnip, and consider the Ruta-baga the best for feeding stock. For table use, the white French, I think is best. But, in my estimation, no other roots are so profitable for stock-feeding as the carrot and Mangel Wurzel, especially the latter, which I believe, with a fair trial, will stand at the head of the root family as food for neat stock and swine. I have fed swine on them during an entire winter, and they grew and did well, with no other food. For neat stock, and milk cows in particular, they are of much value in increasing the quantity and quality of milk.

If farmers would give their attention to this matter, they would be enabled to keep many more animals on the same farm than they do now. In England the root crop is of nearly as much importance as that of hay for wintering stock, and in many parts of the kingdom a field of turnips is considered indispensable for wintering sheep.

Ruta-bagas thrive well in almost any rich soil, and their yield is often enormous. I have gathered five bushels from a square rod of ground; and have thought that three bushels were of as much value for stocks as 100 pounds of good hay. I am confident farmers will find it for their interest to give this subject more attention. And if they but once give it a fair trial, I am very sure that but few will be found without a goodly patch of ground devoted to raising roots.

JAS. FELLOWS.

Salisbury, N. H.

Corn.—In some parts of Pennsylvania the corn crops are said to be greater in the aggregate than at any time before in fifteen years. From seventy to ninety bushels per acre is a common yield, and one field, owned by Dr. Wm. Ragen, of Washington County, made one hundred and twenty-two bushels per acre.

The violet was the national flower of Athens, which city, personified by sculptors and painters, was represented as a majestic female wearing a wreath of violets.

KEEPING SWEET POTATOES.

A. G. (says the American Agriculturist) furnishes to the Dollar Newspaper his method of preserving potatoes, in which he says, "I dig my crops as soon as the frost has killed the vines, so that I think they are done growing, endeavoring to do this where the ground is at least moderately dry. I remove them in a short time, the sooner the better, to a cellar under my house, at the back of which I have a place divided off like a wheat-bin, large enough for the crop. This is made by placing posts or studding in the ground, a few inches, and nailing the tops to the sleepers that support the floor above; then put plank half the length of the bin, meeting at the middle post, twelve or fourteen inches wide, so that you can remove them at pleasure. When you commence filling take out all but one plank, then fill with potatoes until as high as the plank all over the bottom of the bin; then throw over dry sand, if you can get it, if not, dry earth will do; sand is preferable because it will penetrate all the open places between the potatoes, and exclude the air—the great secret, I think, in preventing rot. Continue to add plank, and cover each layer as above, and when your crop is all in, cover over from four to six inches deep with sand or dirt.

I never suffer potatoes to be exposed during the winter, compelling those who get them to grabble them out from the top until the dirt accumulates so as to be in the way; I then scrape off a portion, leaving the remainder of the crop always covered. I have been using the same kind for fifteen years.—One other remark is, perhaps necessary; after putting up my crop during the warm weather through the fall months, I keep the door of my cellar open through the day, so that the warm air from the potatoes may the more readily escape. I have been using as fine potatoes during September, of last year's crop as I ever saw.

Another correspondent has been quite successful in packing them in boxes, which are nailed up after filling the spaces between the potatoes with charcoal.

CALVES WITH SHEEP.—A farmer writing to the Germantown Telegraph strongly recommends letting calves run with sheep: Last season two of his spring calves came from a good pasture much debilitated, without any perceptible cause for their reduced condition. He put each one with a separate flock of twenty-five sheep, and they immediately recruited, and during the entire winter lived very harmoniously with their woolly companions; fed with them from the rack; often changed position at night to get a bed by the side of their warmer fleeces; and, in the spring, they were by far the healthiest and heaviest of his spring calves.—*American Agriculturist.*

WHAT DRAINING DID.

A SHORT CHAPTER FOR HIRED MEN, AND THEIR EMPLOYERS.

SOME years ago the son of an English farmer came to the United States, and let himself as a farm laborer in New York State, on the following conditions; commencing work at the first of September, he was to work ten hours a day for three years, and to receive in payment a deed of a field containing twelve acres—securing himself by an agreement, by which his employer was put under bonds of \$2,000 to fulfil his part of the contract; also, during these three years, he was to have the control of the field; to work it at his own expense, and to give his employer one-half the proceeds. The field lay under the south side of a hill, was of dark heavy clay resting on a bluish-colored solid clay soil, and for many years previous, had not been known to yield anything but a yellowish, hard, stunted vegetation.

The farmer thought the young man was a simpleton, and that he, himself, was most wise and fortunate; but the former, nothing daunted by his opinion, which he was not unconscious that the latter entertained of him, immediately hired a set of laborers, and set them to work in the field trenching as earnestly as it was well possible for men to labor. In the morning and evening, before and after having worked his ten hours as per agreement, he worked with them, and continued to work in this way until about the middle of the following November, he had finished the laying of nearly 5,000 yards of good tile underdrains. He then had the field plowed deep and thoroughly, and the earth thrown up as much as possible into ridges, and thus let it remain during the winter. Next spring he had the field again plowed as deep as before, then cross plowed and thoroughly pulverized with a heavy harrow, then sowed it with oats and clover. The yield was excellent—nothing to be compared to it had ever before been seen upon that field. Next year it gave two crops of clover, of a rich dark green, and enormously heavy and luxuriant; and the year following, after being manured at an expense of some \$7 an acre, nine acres of the field yielded 936 bushels of corn, and 25 wagon loads of pumpkins; while from the remaining three acres were taken 100 bushels of potatoes—the return of this crop being upwards of \$1,200. The time had now come for the field to fall into the young man's possession, and the farmer unhesitatingly offered him \$1,500 to relinquish his title to it; and when this was as unhesitatingly refused, he offered \$2,000, which was accepted.

The young man's account stood thus:

Half proceeds of oats and straw, first year,	\$165,00
Half value of sheep pasturage, first year,	25,00
Half of first crops of clover, first year,	112,50

2

Half of second crops of clover, including seed,	
second year,	135,00
Half of sheep pasturage, second year,	15,00
Half of crops of corn, pumpkins and potatoes,	
third year,	690,00
Received from farmer for relinquishment of title,	2,000,00

Account Dr.	\$3,152,50
To underdraining, labor and tiles,	\$325,00
To labor and manure, 3 seasons,	475,00
To labor given to farmer, \$16	
per month, 36 months,	576,00—1,377,00

Balance in his favor, \$1,776,50

Our farmers must learn that knowledge and enterprise and perseverance exercised in their business, will not only add a hundred fold to their own income, but will also confer more permanent benefits upon our country than these qualities exercised in the same degree in any other business whatever.—W.D. in *N. Y. Times*.

BE SYSTEMATIC.

It will add more to your convenience and comfort through life than you can imagine. It saves time, saves temper, saves patience, and saves money. For a while it may be a little troublesome, but you will soon find that it is easier to do right than wrong;—that it is easier to act by rule than without one.

Be systematic in everything; let it extend to the most minute trifles, it is not beneath you. Whitfield could not go to sleep at night, if, after retiring, he remembered that his gloves and riding whip were not in their usual place, where he could lay his hand on them in the dark, on any emergency; and such are the men who leave their mark for good on the world's history. It was by his systematic habits from youth to age that Noah Webster was enabled to leave to the world his great dictionary. "Method was the presiding principle of his life," writes his biographer.

Systematic men are the only reliable men; they are the men who comply with their engagements.—They are minute men. The man who has nothing to do, is the man who does nothing. The man of system is soon known to do all that he engages to do; to do it well and do it at the time promised;—consequently he has his hands full. When I want any mechanical job done, I go to the man whom I always find busy, and I do not fail to find him the man to do that job promptly, and to the hour.

And more, teach your children to be systematic. Begin with your daughters at five years of age; give them a drawer or two for their clothing; make it a point to go to that drawer any hour of the day and

night; and if each article is not properly arranged, give quiet and rational admonition; if arranged well, give affectionate praise and encouragement. Remember that children, as well as grown people, will do more to retain a name, than to make one.

As soon as practicable, let your child have a room, which shall be its own, and treat that room as you did the drawer; thus you will plant and cultivate a habit of systematic action, which will bless that child while young, increase the blessing when that child becomes a parent, and extend its pleasurable influences to the close of life. A single unsystematic person in a house, is a curse to any family.—A wife who has her whole establishment so arranged, from cellar to attic, that she knows on any emergency where to go for a required article, is a treasure to any man, (my experience, reader!) while one who never knows where anything is, and when it is by accident found, is almost sure to find it crumpled, soiled, out of order. Such a wife as this latter is unworthy of the name, and is a living reproach to the mother who bore her.—*Journal of Health.*

GREEN-MANURING.

The following admirable article is from the *Journal of Agriculture*, and is just such an article as gives us pleasure to read. The author is fearless in stating well attested truths, notwithstanding the fact that hundreds of practical men, who have not been sufficiently observant of precise truth, may oppose his facts. All those who have tried the processes named, are aware of their truths. We take the liberty of appending to the end of the article, a few additional remarks, in explanation of the advantages claimed by the writer.—*Working Farmer.*

There is no subject so interesting and important to the scientific and practical agriculturist, as the relations subsisting between the animal, vegetable and mineral kingdoms. In fact, the successful prosecution of his business may be said to be based on a knowledge of these relations, whether that knowledge be empirical or derived from a study of scientific principles. The gradual operations of nature in forming and enriching soils, in the successive growth of different kinds of vegetables, and in the rearing of animals in localities varying as their habits, discover to the farmer the secrets of his business; and an intelligent observation only is wanting on his part to note and appreciate them. His soils and subsoils, he will find, are at first but a storehouse for the mineral constituents of vegetables, of which only the lowest in the scale can flourish in them.—The tiny lichen, for instance, as it covers rocks and poor soils with its thin crust of variegated colors, insignificant and useless as it may appear, holds an important place in the vegetable kingdom, as it is

the first living thing which prepares the soil for the growth of those vegetables so essential for the existence of man and animals. It dies, and on the elements of its decomposition rises another class of plants, larger in size and more vigorous in growth; these again are succeeded by another class still higher in the scale of vegetation. Thus generation after generation, as it dies out, adds to the soil those elements of fertility of which it was at first deficient—viz., its organic constituents. Having now arrived at what relates particularly to the subject to be treated of in these notes, we need not prosecute further the dependence and relations among animals, vegetables and minerals; we need not show that, as one vegetable succeeds another, so the same order of succession goes on among animals, first herbivorous, then carnivorous; and that the products of the decomposition of all organic beings are for the most part employed to enrich soils, and minister to the growth of succeeding animals and vegetables.

Green-manuring is but the carrying out of that process by man which we have described above as performed by nature in forming and enriching soils. Every plant draws the most of its organic elements from the atmosphere and water, and all its inorganic or mineral, and the rest of its organic elements, from the soil. If, therefore, the plant be plowed into the soil on which it grew, as none of the mineral elements are lost during its growth, not only are all of them returned to the soil, but a great part of the organic constituents derived from the atmosphere.—When nature is working, the plant is allowed to reach maturity, die, and be decomposed where it grew. It is evident that there is here a great loss; for during decomposition, from the stem and leaves of the plant being exposed, the principal part of its organic matter is again given off to the air in the form of carbonic acid and ammonia. But there is also considerable loss from allowing the plant to become quite ripe, for it is not then so rich in organic matter, no small portion of it being exhaled by the leaves and flowers, as is abundantly evident from the fragrance of a full-blown flower, which is caused by the exhalation of ammonia. It is important, then, for a farmer wishing to practice green-manuring, to plow down the plant at that stage of its growth when it is found to be richest in organic matter, which is just before the blossom has been fully expanded.—But there is another advantage in making use of the plant at this stage of its growth. Water is especially necessary for the decomposition of organic matters. A stack of grain or hay heats mainly because decomposition has commenced, from the moisture not being sufficiently expelled before the grain or hay was stacked. At no stage of the growth of the plant is there more water pressure to facilitate the

decomposition, and thus render the plant available as manure for a crop, than at the period of flowering.

We have thus seen that the soil must be considerably enriched in organic matters by green-manuring. And though there is no increase in the mineral elements in the soil and subsoil, still they are searched out in the subsoil by the roots of the plants grown for manure, and presented in the soil in a form more available as food for the crop to be raised. The great object of pulverizing the soil and exposing it to the atmosphere, is to bring its mineral elements to this state; so that the roots of the green-manure plants silently effect what the plows, harrows, and grubbers are employed to produce. On this subject Professor Way has some very pertinent remarks. "If," says he, "instead of leaving the land exposed only to the action of the atmosphere, we crop it with a plant whose roots run in every direction for food; and if, when this plant has arrived at considerable growth, we turn it into the surface-soil, we have not only enriched the latter by the elements derived from the air, but also by matters both mineral and vegetable fetched up from the subsoil. The plant thus acts the part of collecting the nourishment for a future crop, in a way that no mechanical subsoiling or trenching could effect."

It will be obvious, from what is written above, that the plants best adapted for green-manuring, are those whose roots penetrate deepest and ramify most, and whose leaves, from their size, draw most nourishment from the atmosphere. As green-manuring should be practiced only after the land has been cleaned, it is necessary that the plants selected for the purpose be of rapid growth, so that sufficient time be allowed for them to reach the proper stage of their growth to be plowed down, and to be in some measure decomposed before the crop is sown. It is also of importance that the plant employed should cover the ground well, for reasons which we will give presently. The plants used for this purpose are tares, clover, rape; and, on the Continent, white lupins, spurry, rye, and buckwheat in addition. In the south of England the white mustard and turnip are also not infrequently employed. In Scotland the turnip tops are never removed in the best-farmed districts, their manurial value being reckoned equal to that of 3 cwt. of Peruvian guano to the acre; and we have several times seen the second crop of clover plowed down, have the most wonderful effect on the succeeding crop of wheat or oats. Indeed, it is well known among farmers that a better crop of oats will be got immediately after a crop of clover, even when cut twice, than if it were allowed to lie another year for pasture, and no foreign substance be applied to it, or eaten on by sheep.

This arises from the mass of vegetable matter which is left by the roots of the clover as food for the oat crop. Yea, in some fields we have seen it where it was more for the benefit of the tenant and the farm, in these days of light manures, to cut the hay and turn it up at once, than pasture it for two years.—We think that there is no part of our Scottish leases that requires more revision than those clauses relating to hay and pasture.

We have only as yet spoken of those plants used as green-manure for the soil on which they grew; but the practice can be profitably carried out, particularly in Scotland, by transporting vegetables from where they grew to special fields. Of this kind the most important is manuring with the seaweed, the advantages of which are so well known as not to require us to dwell longer upon them here.—A source of annoyance to most farmers is the growth of many weeds on waste ground, the sides of ditches, and of roads not much frequented, and the bottoms of fences. These, instead of being an eyesore and a nursery for weeds in the fields, as they are in too many cases, might be turned to profitable account, by cutting them down and gathering them into a heap, where a compost can be formed with them and any other waste matter on the farm, or a little dung; and from the mass of green vegetable matter collected, fermentation is soon produced, and the heap will be ready for putting on the stubbles immediately after the removal of the crop. And all this will be done at a time when the servants on the farm have comparatively little else to do.

A question of vital importance to the practical man requires to be answered here—whether it is more profitable for him to consume these plants with animals, or use them as green-manure? There is no doubt, we think, that there is more returned to the soil by plowing in the green plants, than by consuming them with animals, and selling off the beef, mutton, milk, or whatever else may be produced.—Numerous experiments detailed in both English and foreign works on agriculture prove this; and in a recent number of the *Journal d'Agriculture Pratique*, in an article written by M. Risler, we observe the following experiments showing the advantage of green-manuring over fallow, and also the consumption of the plants by animals:—"In the neighborhood of Frankfort-on-the-Main, a farmer who had lost all his cattle by inflammation of the lungs, and did not wish to replace his stock immediately, plowed down all his vetches and clover; the wheat which succeeded the green-manure was much better than that beside it, which had been preceded by a fallow manured.

"Two English farmers, Messrs. Love and Hawkins, estimated the crop of oats which they obtained, and

ter turnips that were plowed in, the one at one-seventh more, the other at about 24s. per acre more than that which they got after turnips in the same field consumed by sheep.

M. Schubart, in Mecklenburg, made the following experiments on plots of 65 square metres (about 78 square yards.) These plots were manured after Christmas, 1853, as follows:—

	Wheat. kils.	Straw. kils.
1st Plot, with the dung produced by a bull and calf in 4 days, during which they consumed in food and litter 30 kilogrammes of oat straw, 22 kils. of barley straw, 44 kils. of hay, 15 kils. of wheat straw, and 15 kils. of rye straw: in all, equal to 126 kils. The produce of the plot was,	19.65	52.05
2nd. With the same substances, without being consumed by the animals, 126 kilogrammes,	20.35	54.25
3rd. With 126 kils. of rye straw plowed in,	18.40	53.45
4th. With 126 kils. of wheat straw straw plowed in,	21.75	57.75
5th. With 126 kils. of rye straw after being allowed to lie on the surface of the plot till the end of May,	20.50	50.00
6th. With 126 kilo's. of wheat straw, treated in the same manner,	23.50	48.00

A kilogramme is equal to 2 lbs. 3 oz. 4 drachms avoirdupois. These experiments fully prove that the soil will produce a larger crop from having the plants grown upon it plowed in, than if they were consumed by animals and their manure applied to it. But still the question as to which practice is more profitable to the farmer is not yet answered, for the increased value of the stock consuming the food must be taken into account. This question will be answered by every farmer according to the situation of his farm, the nature of the soil, the system practiced on it, and the skill of the farmer in the management and the buying and selling of stock.—Green-manuring, we conceive, will be found to be of more advantage in England and on the Continent, where vegetation is more rapid than in Scotland;—and from the great heat, there is a necessity of having the soil well covered during the summer. More benefit is often derived from having the soil covered than is generally imagined. The soil may be regarded as a vast laboratory in which chemical action is unceasingly going on, now in decomposition,

then in the formation of new compounds. Two of the most important results of this action are carbonic acid and ammonia, which, exposed to the air and heat, particularly in a loose soil, are soon carried off, if there is nothing in the soil, to fix the ammonia. On this subject M. Risler has the following remarks:—"Another advantage which green-manuring has over fallow, consists in the physical action of the plants on the soil. During vegetation they retain—and the thicker they are the more effectually they do it—the moisture in the earth, and on the surface the carbonic acid which is disengaged. A paper, in the *Agricultural Journal*, of Dr. Hamm, published some years ago, brings out this protective influence of green-manuring. Of two pieces of land of similar description, and of equal size, which had been similarly cultivated for some years previously, the one was sown with lupins, and the other was fallowed. When the lupins were in flower, they were cut, carried to the fallow, and plowed in; then rye was sown on the two pieces. The part that was fallowed gave a less produce than the other.

Cathbert Johnston states a fact corroborative of this influence. An English farmer inadvertently left for some months a door in his fallow field; for several years after, the crops were particularly luxuriant where the door had been lying, so much so that one would have said that some rich manure had been applied to that spot." Every practical man is aware that the better a field in pasture is covered, the larger will be the crop when it is turned up. Now, this arises not merely from the pasture itself being better, and thus keeping more stock, but from none of the products of the chemical action in the soil being allowed to escape. Pasturing is just a kind of green-manuring. From the decay of the roots of the grasses and their blades, when plowed down, a mass of vegetable matter is collected, ready to minister to the growth of the succeeding crop; and during its decomposition, the organic elements are prevented from escaping, during the warm months of summer, by a thick covering of grass. A good farmer, then, who is also a skilful grazier, always studies to let his grass well up before stocking it full, as he knows that, by so doing, it will both keep more stock now, and give him a larger crop afterwards.

Green-manuring will be found more beneficial on light soils than on clayey ones, for the reasons given above. One of the greatest advocates for the system is Mr. Hannam, of Kirk Deighton, Yorkshire.—He writes, in Morton's *Cyclopedia of Agriculture*:—"In a strong clay, warmth and porosity are given; and upon a light and friable soil, where the furrow is properly pressed, tenacity and firmness are imparted by the fibrous roots. Without a previous crop of this kind, many lands are much too light to grow

wheat. Upon the writer's own farm are many fields of magnesian lime-stone, that will not grow a good crop of wheat in any other course than after seeds or clover. However highly a fallow or stubble may be manured, it will not produce a field of wheat equal to that grown after seeds or clover.

Notwithstanding, we do not think that green-manuring can be recommended as a profitable practice in Scotland; for the crops which are usually cultivated for it are those which are much valued as green food at particular times during the summer. For instance, the vetch and the aftermath are both valuable to the farmer, from being ready to cut for his horses and cattle when his pastures have begun to fail; and the rape comes in as most nutritious food for sheep when the grasses have become hard in dry warm weather, besides the advantage which it possesses to the low country breeder of sheep, in exciting in the ewes a desire for the ram much sooner than would otherwise have been the case. There are some cases, however, where it may be thought advisable to resort to green-manuring even in Scotland, as in light sandy soils deficient of organic matter, and situated in a locality where that could not be readily applied to it. In such a case this object will be accomplished more easily and cheaply by growing some of the crops recommended for this purpose, and then plowing them in at the proper time.

In the early part of the above article, the writer admits that the decay of the lichen furnishes the constituents of plants—by its decomposition—in a proper condition for appropriation by new plants, better provided than their predecessors for the absorption of organic food from the atmosphere; and by greater length of roots for the appropriation of new quantities of inorganic matter. He might also have added, that inorganic or organic matter, when received in plants, is progressed by such growth, and thus fitted for assimilation in a higher class of plants; and it is for this reason that green crops are so beneficial as preceding other crops; for all the constituents of the green crop, plowed under, beyond the water it contains, is but small, but in quality it is far more advanced than the mass of inorganic matter of the soil, and is therefore more readily appropriated by succeeding crops. The whole *rationale* of this process may be found in our article entitled, "Advancement of Ulimates by their Use in Organic Nature," page 27 of our present volume.

In addition to this action, might be named the fact, that during the growth of the green crops intended as manure, large amounts of carbonic acid are received by the plant from the atmosphere; and while the soil is protected by the green crop as by a mulch, carbonic acid as a heavy gas lying on the

surface of the ground, and arising from the decomposition of other organic matters, is continually entering the soil and being received by water, which water so charged, can act as a solvent of many of the inorganic constituents of the soil which are insoluble in water not charged with carbonic acid.—Indeed, during the growth of green crops, this coating of the soil by the leaves may be considered as a natural species of Gurneyism or mulching, and it consequently gives rise to advantages, similar to those known to arise from such practice.

The anecdote of the door, related above, will illustrate this action. The surface of the ground being protected, prevents the rapid evaporation from the immediate surface, and thus the temperature is not decreased, leaving the soil warmer, to favor all the chemical changes before referred to.—*Working Farmer.*

WINTER RIDGING OF CLAY SOILS.

This is the season when those heavy clay soils too tenacious in their character to be readily and cheaply worked, should prepare to advantage by Nature's laws during the winter. Such soils should be deeply surface-plowed, in that form known as ridging and back-furrowing, so as to form a succession of ridges. Through the spaces between these ridges, the lifting subsoil plow should be passed to the greatest depth possible, thus leaving a receptacle alongside of each ridge, for the melting snow-water to enter, increasing the surface of contact for the retention of its ammonia. The frequent freezings and thawings of winter, will disintegrate the clay of the ridges, so as to render it pulverent and less liable to become compacted the following year. In the spring these ridges may be split by a two-way plow—usually known as the Double Mouldboard Plow—so as to be ready for early spring work. Any field not precisely level, will be benefitted by the action of the subsoil cuts as partial under-drains—the water passing to the lowest point of the field. Those farmers who have long manures in the fall, with decomposed muck or old charcoal-hearths, may spread them on their clay soils with profit, before ridging and back-furrowing, as this process will double up the manure, causing it to occupy the centre and lower part of each ridge, protecting it from the atmosphere sufficiently to prevent loss by evaporation, at the same time causing it, by the exposure of these ridges, to frequent freezings and thawings, causing perfect decomposition by spring. The escaping gases from the manure will be readily absorbed by the clay ridges, while any portion rendered soluble, passing out into the deep furrows between, will be absorbed by the loose soil, caused to be so by the action of the subsoil plow. Where muck and char-

coal are used, or either, the mechanical condition of the clay is materially improved by its becoming less adhesive, more ready to pass water, and equally capable of retaining manure. When the manuring has been neglected in the fall, it may be placed in the deep furrows in early spring, and covered by splitting the ridges, the after cross-plowing of which will tend to mix it, thoroughly through the whole mass of soil.—*Working Farmer.*

MULCHING FOR WINTER.

Those who have large quantities of salt meadow grass of little value, such as three-square rush, etc., should slightly mulch their grain crops. Such practice will prove a great protection during winter; and a single ton of such cheap salt hay may be spread so thin as to mulch two or more acres. If left in the spring, it will not interfere with the growth of the grain. It may be raked off, however, if desired, and used as bedding for cattle. Indeed, a mulch of such cheap material may be placed on any plowed soil with profit. Many farmers who are in the habit of spreading long manures thinly over the surface of their grass and other fields, in late fall or early winter, erroneously attribute the increased crops of the following year, to the manure which may be washed into the soil. A greater part of the benefit of such practice, arises from the long litter contained in the manure, acting as a mulch; and the same benefits would arise from a top-coating of less value of material. Every one must have observed that an old board lying on the grass through the winter, and removed in the spring, will cause the new growth during the following summer to be larger than the surrounding grass, and arising from no other cause than its action as a mulch or surface protector.—The cheap hay spoken of, will perform the same service on a more extended scale. Pear trees may be mulched with profit: but this should not be done until after they have dropped their leaves, as early mulching prevents their, passing into the nominal state sufficiently early, and thus causing them to take up a larger amount of water during the fall, which is caught between the bark and wood of the tree; and frozen during winter, causing that disease known as winter blight. Our practice is to remove the summer mulch late in September, and not to restore it again until winter has fairly made its appearance. This removal of the mulch arrests the growth soon after the removal of the fruit; and when all activity of the tree has ceased, indicated by the falling of the leaf, the mulch may be restored so as to secure early spring growth.—*Working Farmer.*

EXHAUSTION OF SOILS.

BY S. DUDLEY.

THE following is from the *Farmer and Planter*, of Pendleton, S. C., by Mr. S. Dudley, late pupil with Mr. H. C. Vail.

Every farmer is well aware that soils after years of ordinary cultivation, decline in productiveness, and ultimately become "worn out" or exhausted. Some soils require but a few years, and others require many years, to produce this exhaustion; the former may have been in an unproductive state when the cultivation commenced, else there may have been a deficiency in the materials applied for the growth of the plants; the latter may have been in a productive state at the commencement of cultivation, else there may have been only an ordinary supply of plant constituents.

The farmer is frequently surprised that his intended crops fail when he has exercised particular attention in the application of *all* his manures.—But experience teaches us that the majority of failures in farming may be traced to the imperfect understanding of the judicious management of fertilizers. Hence the importance of directing the farmers to the subject of inefficient manuring, which is the fundamental cause of exhaustion.

It is well known that many people are leaving the Atlantic States, "for the West," because the soil in said States is so unproductive. It is also generally known, that the once fertile valleys of New York are waning in productions. It is also true that the West must suffer a decline in fertility eventually, if the people pursue the present ruinous mode of culture which is practiced to a great extent throughout the country.

The following upon the subject, is taken from Liebig's recent work: "The mineral substances found in the ashes of plants, were originally ingredients of the soil. In the shape of the agricultural produce of a field, or in the crop, the entire amount of these ingredients of the soil which have become ingredients of the plants, are removed from the soil." Now it is evident that we must return to the soil the same quantity and quality of ingredients as the crop removes, if we would continue the soil in a fertile condition. As this has not been done with most farmers, it is obvious why soils decline or become entirely unfit for the productions of cultivation.

There has been a general disposition to borrow of the soil, without a knowledge of the mode of repaying: but this repaying is important with house and man, and, again, the soil will certainly tell it

you do not repay. Here the question naturally arises, what must be applied to the soil when a crop is removed? As a full answer would be too extended for this article, a partial one must suffice.

In the ashes of the cereal grains, phosphoric acid and potash predominate; in tobacco, lime is most abundant; and in cotton, phosphoric acid and lime are the principal constituents.

Besides these, there are seven inorganic elements which aid in the constitution of the ash, all of which must be present in the soil in the proper condition and quantity for the assimilation of plants.

The mineral constituents of our bones, consisting principally of phosphoric acid and lime, (phosphate of lime.) But how can we expect bone-making materials in food produced on lands destitute of it. Flour made from wheat raised on such lands, is inferior in quality to that raised on good lands; therefore, should be sold for a corresponding inferior price.

The remaining ninety-eight per cent. of the crops before stated, is composed of organic ingredients, which, in connection with the mineral, are usually carried from the farm, and the farmer ought to furnish an equivalent in the form of special manures. But even the fertilizers produced on the farm are not properly managed, consequently the value is depreciated about seventy per cent. by exposure to the leaching rains, and the evaporating atmosphere. However, the volatile gases may benefit some wise or fortunate neighbor, whose soil contains absorbents with open mouths, to arrest the valuable runaways.

Having hinted at causes sufficient to produce exhaustion, it remains to cite—more particularly than has been done—the means of restoration.

The old adage, "Appearances are deceitful," applies to many soils which will not produce crops, still they contain the elements of plants in a crude or unprepared state. Owing to the minuteness of the radicles and mouths of plants, the preparation of their food is an object of importance, and one closely allied to the mode of restoration.

Some barren soils contain the elements for the growth of plants in a state prepared for immediate use, but the variety is too limited to complete a plant structure.

There is but one wise course to pursue for the resuscitation of these soils, namely: by the aid of science, which can point the way which art should follow. This it can do, by giving the quantity, quality and condition of the elements, which the soil holds for plants, and also, by showing the pro-

cise fertilizer which it requires. Is not this reasonable? It is true that long and watchful experiments have been of great avail to the farmer, and he owes his success to them principally; yet there is abundant room for science to make improvements with the co-operation of art. The one is dependent upon the other, and they should be constantly in company upon every farm without a disposition to mention their respective merits in a manner of superiority—for they are equal, and he who regards them otherwise, is not a *genuine* farmer.

IMPROVING WORN OUT LANDS.

Our readers will find in the following, a confirmation of three great truths which we have ever taught, and for which we have received no small share of abuse, from that class of editors who choose to enjoy an ephemeral success by pandering to the prejudices of uneducated persons. Deep plowing, subsoiling, and the judicious use of *suitable* manures, having accomplished the seeming miraculous transformation of a useless farm, into one highly fertile and profitable to the owner.

Working Farmer.

An experiment, which has been tried by some enterprising gentlemen not far from this point, the present summer, establishes conclusively the value of *deep plowing* and the *economy of good fertilizers*; and it also shows, that it is better for Connecticut men to go to work on the poor and "worn out" (?) fields which constitute so large a portion of the surface of their own State, than to start for "the west" to farm it, where half the profits of their crops are absorbed in the expense of transportation to a market. These gentlemen have brought under cultivation some thirty acres of land which had been abandoned as useless, it having been impoverished and drained of all vegetable principle by persistent cropping, years ago. Much of it was too poor to grow grass, pine trees being the only product, and none of it was better than the thinnest and poorest of all old pasture lots.—This land, at prices ranging from \$7 to \$13 an acre, has been purchased and plowed with a *subsoil plow*—just such an instrument as some of our farmers in Connecticut need to have their skulls and ideas plowed up with a little, till they can see the important truth that 2 and 2 make 4, and that *right under* the very farms which they have impoverished and are now working to poor advantage to gain a bare subsistence, exist *other farms* which have never yet been touched by the plow.

share, and whose capacities are waiting to be developed. A mere annual *scratching over* of the surface to a depth of ten or twelve inches, will never develop them. The entire surface of these thirty-odd acres was plowed to the depth of two feet—and this on a light sandy “worn out” land. Then a plentiful use was made of guano and phosphates. The *result* is, that on land hitherto supposed to be too poor for anything, there are acres of such potatoes, corn and buckwheat, as can be found nowhere else, not even in the Connecticut Valley! The potatoes were planted deep, in drills evenly plowed out by horse power, a superior method, which saves space and greatly benefits the crop. Large and uniformly good seed potatoes were selected for planting. The growing crop undoubtedly surpasses anything of the kind in the State. These potatoes will yield three or four hundred bushels to the acre. As Tristram Shandy says, “A handsome moral might be picked out of this, if I had time to do it;” as it is, we leave the Connecticut farmers to pick it out themselves, with the assurance that it is worth their seeking.—*Hartford Times*.

FARMERS' CLUBS.

AMONG the best instrumentalities to awaken interest in the improvement of our modes of cultivation, there are none that stand higher than the one named at the head of this article. A few words as to the uses of these associations and their mode of action, may not be thrown away. Every farmer has peculiarities in his management of each branch of his calling, and for every one of his peculiarities, if he is a sensible man, he has a reason that to him is abundantly satisfactory. He is confident that if his neighbor would but follow his mode of cultivating a crop or rearing an animal, he would be greatly benefitted, and eminently more successful than he is to follow his own. While his neighbor believes precisely the same in regard to him. Let these two men, with half a dozen others who hold all shades of opinion on the points where the two differ, meet to discuss the mooted questions, and there are a hundred chances to one that the opinions and practice of every man in the room would be modified and improved. In the present unsatisfactory condition of agricultural science, next to a long series of carefully conducted, well arranged, detailed experiments, there is nothing so much to be desired as a bringing out of opinions, and a comparison of the practices of practical men. And we can conceive of no means so well calculated to do it as a pleasant neighborhood gathering

of farmers of an evening, to talk over the modes of practice pursued by them individually in reference to some particular subject to which the evening is devoted. There need be no formality or speech making; let it be entirely a conversational meeting, and a record kept of the mode advocated by each person, in order to give some value and perpetuity to the discussion.

Our word for it, a dozen farmers in any town who will meet and start some subject to be discussed, as for instance the best mode of harvesting Indian corn, whether to cut it to the ground or to cut the stalks and leave it to ripen on the hill; the best time to plow sward land for corn, and a thousand other things where men differ, will soon find that the loss of a dinner will be preferred to missing the meeting of the club.

And no dozen men can get together and pass one evening in two weeks through the winter and discuss questions upon which they are all well informed, without giving and getting more useful knowledge than they suppose; every one of them will find his views more or less changed, or will have the satisfaction of seeing that his neighbor has changed his and his practice. We have seen the working of an institution of this sort, and can instance individual and aggregate practice wonderfully improved through its influence, and are confident that none of the members of that body regret the time and trouble invested in the Farmer's Club.

The mode of management is very simple—an organization for order requires merely a President, V. President, Clerk and Treasurer, a tax just sufficient to heat and light the room used and no more; a subject is chosen to be discussed at the next meeting, and two men or four, who are supposed to think a little upon the matter, to break ground in the discussion. One of these men at the meeting gives his opinions upon the matter in hand sitting down, and with no sort of formality,—if any one differs with him he states his opinion and objections: the courtesy that maintains good order prevents confusion, but there will be plenty of warm debate and strong advocacy of individual views. We earnestly commend this matter to our readers. Clubs will confer a favor if they will send us reports of their discussions; we shall be glad to publish any that possess general interest. Those who have experienced the advantages of an institution of this sort, will advance the interest of progressive agriculture, if they will, furnish a detail of the workings of their own institutions, the subjects discussed, and the benefits derived.—*The Homestead*.

For the Arator.

UNION, DAVIE Co., January 15, 1856.

MR. T. J. LEMAY: In compliance with the proposal made in the January number of the Arator, I will endeavor to furnish the information desired, as correctly as my limited information will permit.

The principal staples of this county are wheat and corn, with oats, rye, tobacco, cotton and potatoes. By reference to the census of 1850, you will find that Davie produced 29,976 bushels of wheat, 391,910 bushels of corn, 79,129 bushels of oats, 3,219 of rye, 41,430 lbs. of tobacco, 154 bales of cotton, 7,601 bushels of Irish potatoes, and 9,866 of Sweet. There are 45,779 acres of improved land in Davie; allowing one-half to be cultivated in corn, the yield would not be quite 14 bushels per acre; allowing one-third to be cultivated in wheat, the yield would not be quite two bushels per acre. I am unable to ascertain the number of hands employed in agriculture in 1850, and cannot say with certainty the amount raised per hand; but from the best information I have, I think 12 acres would be a plenty for a hand on an average. In 1859, the mode of cultivation (that is of wheat and corn,) was as follows:

About the first of March, the land was plowed with Scuter or half shovel; in April, it was either listed with three furrows or checked with a single furrow, about $4\frac{1}{2}$ feet apart; the rows are run the same distance the other way, and the corn planted and covered with a hoe. After the corn is up, it is thinned to two stalks to the hill; it is plowed four times, and laid by. The corn is then gathered, and wheat sowed on the field in November.

But I am glad to be able to say that there has been great improvement in agriculture since 1850. The farmers manure more, and prepare their land better to receive the crop, and, as all must know, the yield is increased. I think that I am safe in saying that the corn crops has increased twenty-five per cent., and the wheat crop one hundred per cent., with a like increase in the other grains. The people now sow their oat land in wheat, which they turn over with a two horse plow about August, and sow their wheat in October.

Shortly after the Act to encourage agriculture, the farmers of this county formed an Agricultural Society, consisting of twenty-three members, and held their first Fair at Farmington, which had a beneficial effect, and the Society was increased to sixty, and each one set about the work of improvement; and I am glad to say, that 153 bushels of corn has been raised on an acre and 50 2-38 bushels of wheat.

Our stock, of all kinds, has increased in value fifty per cent. Hogs one year old have been made to weigh 530 lbs. and 25 months old, 840 lbs.

The exhibition at our last Fair was highly creditable to the members of the Society. The exhibition of Floral Hall was not to be surpassed by any county, while the horses, mules, cows and hogs, were very hard to be surpassed, and not often equalled.

I will furnish you with a list of the officers of the Society and an official account of the proceedings thereof, after our next meeting.

I remain yours, &c.,

B. F. LUNN, *Recording Secretary.*

INVERTING POSTS.—We have, from time to time, heard of instances where two posts cut from the same tree, have been set near each other. In these cases it has been observed that the more durable post has been set in an inverted position, or top downward. There is some plausibility in the statement, for, supposing the pores to retain their sap-conducting power after being cut down, the water would be more likely to ascend and keep them moist and hasten decay. There are some objections to this theory, however, for it is the action of the air that produces and hastens decay, and if the pores are kept filled with water the air would be shut out and decay retarded. It is well known that wood lasts much longer in water than in air; and it is even probable that a piece of wood kept under water, entirely deprived of air, would be preserved for an unlimited period.

This matter can scarcely be settled by theory; long-continued observation can only fully determine it. We recommend fence and other posts to be set in an inverted position, as a general thing, where the form will admit of it; but in order to test the matter fully, let an occasional one be placed in the natural position, and be marked for future observation. Reports from those who have given attention to this subject are desirable.

American Agriculturist.

HOPS.—The Utica Gazette says that the county of Otsego (N. Y.) has for some years been reputed the most extensive hop growing region in the State. In 1854, the number of acres appropriated to the cultivation of this product was 2,500, and it is estimated that 1,000 acres more will be cultivated the present year. Thus, at the ratio of last year's product, 800 lbs. to the acre, the crop of the present season will reach 2,800,000 lbs., which, at the present market value—about 20 cents per lb.—would realize \$560,000.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., MARCH, 1853.

CONTENT FOR PREMIUMS.

OUR readers have now had the Premium List for the next Fair of the North Carolina State Agricultural Society before them a month. Who among them have given it a critical examination? Who have resolved to contend for prizes? Who are making suitable and earnest preparations to succeed in the laudable and patriotic contest?—Has any householder, farmer, or mechanic, laid aside the list coldly and supinely, without giving it even a reading? Is any one, who is in a situation to contend, too lazy, indolent or indifferent to make an effort? Is any one too diffident, timid or distrustful of his abilities, to enter the lists? Is there a single member of the Association, especially, careless and unconcerned about the result of this year's operation in the various pursuits which it is the great object of that institution to stimulate and improve? We trust there are many—very many, to be found in every county, who will contend manfully for the honorable distinctions which are to be conferred, and use their best endeavors to induce all within the circle of their influence, to go to work *now, at the beginning of the year*, with the determination to contribute their mite towards increasing the number and improving the quality of the articles for exhibition, and rendering the Fair exhilarating, imposing and useful—far surpassing its predecessors—one never to be forgotten—an honor to our State—a great and lasting benefit to our people. And for the honor of the State, we hope there is not one too stupid to see the advantages of efforts at improvement to himself and to the community, or too lazy to work, to be found within her borders. If there is one, with soul so dead, as not to do a good deed, speak a good word, or breathe a good wish for the success of this great and noble cause, let him continue to crouch in the chimney corner, roll in the ashes, and endure the consequences of his folly and madness.

The premiums offered are worth contending for, both for the honor and the pecuniary value which

they offer; and we repeat, we hope they will excite competition everywhere, among all our citizens, from the seaboard to the mountains.

The premiums are to be in money or plate, and, we take occasion here to remark, we hope the Committee will add *books*—valuable agricultural works—to the prizes. It may not be proper to substitute them for those already fixed and published, but they can be made to constitute the discretionary premiums; and in nine cases out of ten, they would be preferred to small money premiums—and would be carefully preserved by the winner as trophies worthy to be handed down to his children. They would be read, and none can calculate the amount of good they would accomplish. Messrs. C. M. Saxton & Co., New York, Agricultural Book Publishers, keep on hand a large collection of books, suitable for premiums, and there can be no difficulty in procuring them to carry out the plan, should it be adopted.

FRUIT CULTURE IN NORTH CAROLINA.

We invite the special attention of our readers to the following extract from a communication to the *Western Eagle*, on the subject of raising fruit in North Carolina. It shows that it may be made a very profitable, as well as agreeable business.

In this climate, we are blest with many products from the earth, and among the many, the culture of the apple cannot be too highly recommended as a source of pleasure and food, and as a profitable product for market, equal, if not greater than corn or wheat. As evidence of the fact, I cannot do better than to give you the wise example set by the Rev. Benjamin Hamilton, in the cultivation of this valuable fruit, and constant comforter to man from his earliest history to the present day. Mr. Hamilton resides in Rutherford county, upon Cane Creek, and has given his attention to this business for twenty years of his life. He began by grafting from the old stock of apple trees, planted by our Revolutionary Fathers, and they soon died out because the present stock was too old. He next replenished his orchard by Northern grafts, and they failed, for two causes: First, their parent stock was too old; Secondly, they could not be acclimated. He then determined not to be foiled in his long and arduous efforts in raising trees to produce the finest of apples one hundred years, (or, at least, for the average life of three or four generations, taking nineteen years as the average life of one generation,) he was forced, by our climate, to adopt the plan of raising large nurseries, from sowing the seed of the native, or acclimated growth

and in this way he has succeeded in getting a parent stock, young in years, and vigorous in growth, producing a fruit pleasant to the eye, and delicious to the taste. His present orchard covers about *four and a half* acres of ground, and numbers two hundred and twenty-five trees, and yields, annually, about *one thousand bushels*. His intention is to increase, shortly to one thousand trees, as he has become satisfied that he has eminently succeeded in getting an apple well ripened, or matured from its peculiar adaptation to the seasons, or climate in this latitude. His trees being young in life, the apples hardly ever take the rot, whilst other orchards around him totally fail, owing to the want of vigor in the sap to remedy injuries or back sets from the irregularity of seasons or variations of temperature, being similar to the human constitution for the young will frequently escape taking cold, whilst the old will get afflicted. From his experience, he has never found over *fifteen varieties* that produce first-rate fruit, as yet. This year he has purchased two bushels of seed, at \$2 per gallon, to sow, for the purpose of increasing his nursery, and he expects to have 500,000 seeds in the next three years, for sale, of his choicest trees. He has now, on hand, 30,000 ready to distribute among his friends far and near.

To show the great wealth to be made by the culture of this delicious fruit for market besides our home consumption, it is only necessary to place before the public, Mr. Hamilton's present crop at *twenty-five cents* per bushel, which he is now selling at Rutherfordton at \$1 per bushel, for he feels confident with Rail Road advantages, it will increase his profits three or four fold. Statement, 226 trees—one crop, 1,000 bushels, at twenty-five cents per bushel—total worth, \$250, and this from four and a-half acres. Now suppose you get \$1 per bushel, it would be worth \$1000 from the four and a-half acres.

By the census, there are 959 farmers in Rutherford county; each farmer cultivating in apples, *five acres*, will produce, according to the above data, \$1,000,000 worth of apples.

The culture of the apple and vine cannot be too highly recommended in the boundary of this State, as we have a great variety of soil and climate from the seashore to Clingman's Peak, upon the Black Mountain, and I am confident they will grow them to full perfection. The planting of orchards and vineyards are placed before us by Holy Writ, in the most urgent manner, by example of the Patriarchs. In fact, when I see a house surrounded by beautiful orchards, I think of contentment, of

happiness, and all the christian virtues clustering about the hearth-stone of the home house of man and wife, but when I behold a house with no orchards, I think of a barren heath, discontent, starvation, and quarrels between man and wife, and threats by the husband to move to the far Western wilds, where a large part of the wild eat and hyena kind of the human family live, and woe to the poor woman, if she should live to be carried there by a brutish and staggering husband. She is a mother—pity, respect, love her. We all have mothers, and touch not roughly, by word or deed, the tender cords of her heart, for she nursed us in our helpless infancy, and guarded us from the demon of death, whilst we slept in the cradle of our innocence.

ECONOMIC CULTIVATION.

We have repeatedly seated ourselves, (says the Plow, Loom and Anvil,) with the intent of writing upon the best mode of cultivating the various crops, and almost as often have we actually had our attention turned to and written upon some other topic. The reason is this: No one, except the favored few who have all the means at command needful in carrying out their plans of farm operations, can do half as well as they know how to do. Their land is poor, and they have not the means of enriching it. Tell a man that a purse of gold is only an inch beyond his utmost reach, and you do him no good but to excite feelings of discontent and envy, and even lead him to forego certain improvements which are within his reach, because they pay so little compared with what he is really anxious but unable to do. Poverty is a terrible burden, and nowhere is it felt more than among intelligent farmers.

Notwithstanding these difficulties, we would now urge this class of farmers, first, to expend their labor and their fertilizers upon a much smaller quantity of land than is usually done. Instead of planting five acres of corn, plant two, or even one; and plow and cultivate this small field to the entire neglect, if need be, of other acres. If those lie fallow, it will be useful to the soil, and at least no money will be wasted upon them.

We say to such farmers, in the second place, you can do more than you have done in the preparation of various composts. There are very few farmers who cannot double and treble the quantity and value of these necessary means of restoring vigor to worn-out and barren soils. By diminishing the extent of surface under cultivation, and by proper industry in preparing composts, there is scarcely a farm in the country that cannot be made to produce its sixty, and seventy, and eighty bushels of corn to

the acre. And even though one acre only is brought up to this desirable condition, a series of years will suffice to bring the whole farm to a high state of cultivation. If only small fields are made thus productive, the hopes and courage of the farmer will be thereby excited, and he will stand up manfully among men, and tell of his success as well as they.

We would not advise farmers of limited means to buy guano or phosphates at anything like the present prices. Pay your poor neighbor his six or eight shillings a day (if you cannot exchange work with him) to help you collect leaves from the forest, mud from the meadow, carting the latter, only after it is tolerably dry, peat or marl from the bog; and if you can buy barn-yard manures, mix them with tufts, sods, roots, weeds, dirty straw, spoilt hay, chips that are unfit to burn; and if you are conveniently situated for it, get sea-weeds from the sea-shore, oyster shells, old bones, horns, etc. Dead animals are of great value. The offal from a slaughter-house, worthless scraps of hides, bones, etc., should be used only with large quantities of common soil, or of some other solvent. Not one in a hundred turns to the best account the contents of privies, hog-pens, soap-suds, and other kinds of waste.

Pardon us for asking why will you tax yourselves so severely by neglecting any of these modes of improving your lands? It may be only such neglect that keeps you in poverty; and though you enter upon the work with many painful doubts in relation to the result, we will assure you against loss from any such operations, if conducted with tolerable discretion.

Now is the time to commence this system of operation. On every leisure day, let the time be occupied in these preparatory labors. Every hour thus spent is worth something, and will tend to fill your purse at the time of harvest.

Almost all farmers sadly neglect their barn-yard manures. Were these properly cared for, their value as a whole, would be more than double.

Having thus suggested the means by which manures may be provided, the next inquiry is, how and where shall they be used? Perhaps we are unable to give the information that many would desire, for reasons suggested in the last number. Perhaps you have an enclosure that for many years produced very large crops, and you just looked on and watched your opportunity to take from it the most you could get, returning nothing to it. It may be that it is so situated that it is almost able to take care of itself, like much of the intervale on the Connecticut, which is annually enriched by being overflowed.

Youth writes its hopes upon the sand, and age, like the sea, washes them out.

Our favorite, the American Farmer, which every farmer ought to read, has the following, which we regret we could not publish earlier.

"THE BEASTS THAT PERISH."

We mean, good reader, those old cows and oxen, yours perchance, destined to die of cold and starvation, somewhere between the 10th of March and the 10th of April, 1856, "poor and very ill favored, and lean fleshed," such as Pharaoh dreamed of. But "never saw in all the land of Egypt for badness."—We are neither a prophet, nor the son of a prophet; but judging by the past, we have a distinct foreseeing of what will surely come to pass, as to these said lean kine.

In the first place they will do what they did, in Pharaoh's dream; they will eat up the fat kine.—That's their mission and their revenge. Whatever of profit your generous milkers and well-fatted oxen may have yielded, will surely be swallowed up in this most unthrifty trade or murrain hides. It is a trade that cannot by possibility be made to pay expenses. Even the farmer who discharged his overseer, because, the result of his year's management show a falling off in this source of income, we have reason to believe made no gain by such sagacious policy.

Apart from any consideration of profit, surely no man, much less one who calls himself a christian, will distinctly anticipate and realize, the misery, and slow pining wretchedness of the helpless brutes he has charge of, without taking prompt and efficient measures to guard against it. It is for this reason, we call attention to the matter now. Now is the time to prevent it, because now it can be easily done. There is no difficulty about it, if taken in time.

Overlook your stock and your means of support, and determine what proportion you have the amplest provision for, through the winter and spring. All supernumeraries, either sell to your neighbor who may want, or begin at once to fatten for the butcher, and get rid of before Christmas.

For those that remain, have not only good and sufficient food, but houses or sheds, and dry beds. Food is not sufficient without protection from the weather. High feeding will compensate in a measure for exposure, but it is very wasteful management. Every animal should have at least the protection of a shed, closed on three sides. Cattle winter better perhaps in such sheds than in closer houses, but only because of the difficulty of ventilating the latter. The warmer an animal can be kept, the more economically can he be fed, other things being equal; but clean wholesome air is as necessary as food. The master should go to bed on a stormy night, with the comfortable reflection, that every beast dependent upon him, is as comfortable as himself. Such management will break up the whole trade in murrain hides, but it will be a profitable loss, and one that the farming community can well afford.

We copy the following from that most valuable Journal, the American Agriculturist. We should be glad to know that it was extensively circulated among us.

HOW TO PLOW UNDER TALL WEEDS.—Where weeds have not been kept down by other crops, or by close pasturing, they have, as might be expected, made a most luxuriant growth; and as many such fields will have to be plowed for wheat, and other fall crops, it becomes a matter of much importance to know how we can best turn them under with the plow, so as to be completely out of the way of the harrow and drill. An excellent way to do this, is to fasten one end of a heavy log-chain to the end of a double-tree to which the farrow, or off-horse is attached, bringing the other under the beam of the plow, just before the share, and confining it there. The chain should lag enough, to touch the ground, or nearly so. A little practice will teach how tight it should be. By this plan the weeds are drawn into the furrow and completely covered by the furrow-slice falling on them while there. Will somebody tell us of a better way?

A FACT IN MANURING.—The American Agriculturist says: A person carrying some orange trees from China to the Prince of Wales' Island, when they had many hundred fruit on them, expected a good crop the next year, but was utterly disappointed; they produced but few. A Chinese, settled in the island, told him if he would have his trees bear, he must treat them as they were accustomed to in China;—and he described the following process for providing manure: "A cistern, so lined and covered as to be air-tight, is half-filled with animal matter; and to prevent bursting from the generation of air, a valve is fixed which gives way with some difficulty, and lets no more gas escape than is necessary; the longer the manure is kept the better, till four years, when it is in perfection; it is taken out in the consistence nearly of jelly, and a small portion buried at the root of every orange tree—the result being an uncommonly great yield." A person hearing of the above fact, and wishing to abridge the term of the preparation, thought that boiling animals to a jelly might have a similar if not so strong an effect. Accordingly, he boiled several puppies, and applied the jelly to the roots of a sterile fig-tree; the benefit was very great—the tree from that time for several years bearing in profusion. Hints of this kind are well worth preserving, for though a farmer may neither have the apparatus of the Chinese, nor puppies enough to become an object of attention, yet the reduction of manure to a mucilaginous state ought perhaps to be carried further than it is.

OXEN VERSUS HORSES.

An enthusiastic admirer of oxen, in pleading their claims in the Stock Register, says:

Oxen are much better in many respects for working than horses; some of which advantages may be summed up as follows. They cost much less in the first instance, and are therefore more within the reach of men of moderate means. They are less liable to disease, and if an accident occurs which disables them from labor, they may be converted into food. If a horse should happen to break a leg, a bullet might as well be put through his head at once, for he is worthless ever after; but if the same accident happens to an ox, he can be converted immediately into beef, provided he is sufficiently in flesh; or if this is not the case the wound can be generally so far cured as to enable the animal afterwards to fatten.

The ox will eat less food and of a coarser kind than the horse, and needs less attention in order to thrive. He will work in localities impossible for the horse, and go forward patiently with labors which would chafe the other into utter intractability.

No man who has ever witnessed the two kinds of animals at work around a saw mill yard, for instance can fail to have been struck with this difference in their character. Hitch a span of horses to a log which is too heavy for them to start at once, and in nine cases out of ten after one or two efforts they will either break their harness, splinter a whiffletree, or balk, and refuse to draw at all. Now try it with a yoke of well broken oxen, and they will lay out their utmost strength with the same gentleness and good will for the twentieth time, as they did first.

From the American Agriculturist.

ALFALFA.

The alfalfa or Chilian clover, which Lieut. Haddon refers to, page 137 current volume, and to which you alluded to in some back number, is nothing but the old lucerne. I have had lucerne for some fifteen to twenty years, from a small patch to four acres, and think I know it.

The alfalfa was sent me three or four years ago from the Patent office. The seed, when first seen, was pronounced lucerne; but I concluded to test.—I did so, and lucerne it was. Fearing an accidental mistake, I procured another parcel from Florida, seed as the other, and lucerne it was.

I have it growing in my flower-garden, putting it there, supposing from the newspaper accounts, that it would be more desirable than aught else, and I could be sure to watch it and do the nursing when in the flower department. I send you a twig from both lots.

Like Monsieur Tonson in the play, *this grass* (clover) pops in when one little expects it, and it expects to be paid for it; when if called lucerne, it would be regarded only as lucerne. P.

[The above is from a reliable correspondent of extensive observation. The samples forwarded were kept over two weeks in the mail bags, and were so much dried and broken by hard usage of the letter, that we found it impossible to examine them. We imagine there must have been some smash up on one of the southern railroads.—Ed.]

GRAPE CULTURE IN NORTH CAROLINA.

EDITORS SOUTHERN CULTIVATOR: I see by the August number of your much esteemed paper, an inquiry relative to Grape Culture in the South, over the signature of "J. S. G." If you will permit me to give him my views on the subject, through your valuable paper, I will endeavor to do so, if you think any benefit will be derived from them. I have been all my life working in and attending to my father's (S. Weller) Vineyard and Nursery, and since his death I have taken the management thereof.

He (J. S. G.) first wishes to know what kind of Grapes are best adapted for the South? I answer, unhesitatingly, the Scuppernong Grape Vines are the best, for the following reasons:

1st. This vine is the most thrifty in growth, on any kind of soil, poor or rich. After they get fairly started, they will grow on ordinary good soil, upon a scaffold 10 feet high, and will cover two, three or four feet, all around, in one season, owing almost altogether to the strength of the soil.

2nd. They will produce at least three-fourths more grapes on the same land than any other grape vines I have ever known, or of which I have ever heard; having tried from 150 to 200 kinds, including a good many foreign kinds; besides, I have known one vine to produce enough grapes to make 50 gallons of wine.

His second inquiry is, what time is best for planting? There are different opinions on this subject; some think autumn, some spring; but I think, as they are very hardy vines, enduring a great deal of cold without receiving any material damage, that any time between fall and early spring will do. It is, however, not best to wait till the sap is too far gone, when planted in the spring, to admit of their receiving enough to promote growth, &c.

The third inquiry is, what period from planting to producing? That is somewhat owing to the strength of the soil; if the soil on which they are

planted is good, they will commence producing in two or three years, and increase prodigiously every year afterwards.

The fourth inquiry is, how are they to be cultivated? Set them out about 20 feet apart, and while they are young, beans, cotton, or anything of that kind, can be cultivated with them till the vines have obtained too large a size to admit of anything being cultivated underneath. By that means the vines will be cultivated sufficiently, but care should be taken to keep them clear of grass and weeds during the whole summer. After they become too large to admit of anything being cultivated with them, keep them clear of grass and weeds as before stated by a plow that will go no deeper than to scarify or root up the grass and weeds.

Prune them while young, till the body gets to be about ten feet high, then let them branch off in every direction without pruning. I make a variety of kinds of wine from the Scuppernong Grape, that sells from one to four dollars per gallon, according to quality. It always sells better than wine made of other grapes; moreover, the Scuppernong wine is in greater demand in the South than any other wine made of native grapes. Hoping I have answered Mr. "J. S. G's." inquiries satisfactorily, I subscribe myself

Most respectfully,

JOHN H. WELLER.

BRINKLEYVILLE, N. C., September, 1855.

CULTURE OF COTTON—SELECTION OF SEED.

EDITORS SOUTHERN CULTIVATOR: I have been, for the last eight years, a regular subscriber and reader of the *Southern Cultivator*, and have all the volumes since that date either bound or on file for binding. And here let me record upon its pages my testimony that I have derived important advantages from it by way of agricultural education; and, in brief, that both I and my soil have been *cultivated* by it. When I began to plant cotton I was entirely ignorant of everything appertaining to it. Endeavoring to learn by inquiring of others, I soon found such a mass of incongruous and incompatible opinions that I felt compelled to rely mostly upon observation for what I had to learn. That course I adopted and still continue, finding frequent aid and encouragement in the pages of the *Cultivator*. I have been planting twelve years, and as yet have communicated but little of my experience. Soon after I began to learn, 'my fingers began to itch for the pen' to

tell through the Press, what appeared to me of importance. But second thought suggested:—"Wait a little, perhaps it is not new, or perhaps it is the exception—not the rule. Think more; try again. I'm o'er young to teach yet." So the editor, the printer, and the public have been spared.

Some conclusions, my observation and reasoning have brought me to, that I think cannot be too often or too urgently presented to the minds of Cotton planters:

Second to nothing else, in my opinion, is the necessity of purifying and keeping distinct each variety of seed planted. I am satisfied that to obtain a full crop for a succession of years, it is not only necessary to adopt the best varieties, but to exclude all worthless varieties, so that every plant may contribute its full share and quality of staple. This is the only means of bringing each variety to a practical test as to the quantity and quality of staple, and their adaptation to different kinds of land and different parallels of latitude.

It is, perhaps, also possible to avoid, in a great measure, some forms of disease. It is not yet ascertained how the disease, of late years so destructive, called the Rot, is propagated. Perhaps a tendency to that disease is hereditary, like consumption, lurking in the sap out of which the tissues are organized, till the plant arrives at a certain degree of maturity when it is rapidly developed by a few days of favoring weather. If so, it may be exhausted or at least kept at bay by selection. I have ascertained that the type of stalk, of maximum productiveness, may be improved by selection.

For ten years, I have not planted a single crop except from carefully selected seed. I have done this, looking for remuneration solely to the increased yield which I expect, and in which I have not been disappointed. I have tried almost all the "fancy," or, "crack" seed that have in various ways obtained an ephemeral fame; but have confined the principal part of my crop to two varieties, to which, since 1850, I have added a third, which I esteem very highly as an early opener, late grower and great bearer. I have given it the characteristic name of "Crowder," for it bears crowding on the land; it crowds the squares and bolls on the stalk; it crowds the planter to early and rapid picking, and, finally, crowds out a crop. The Prolific Pomegranate is my other favorite variety. This cotton I have planted and kept very pure for several years, under the name of "Olive," which name I had given it for my own convenience

before it was known by the name of Pomegranate, and which I prefer only because it is short and easy to speak. My other variety is Mastodon, of which I plant a small portion of my crop every year for late picking, and do not pick a lock of it till I have picked every boll of the other kinds. I then, generally in January, gather it without pains, getting good weights; pass it through a very common gin, and sell it in New Orleans for from twenty-five to fifty per cent. more than any other cotton. These three varieties of cotton I have in unusual purity; and as the result of my pains, my stalks are now loaded and bowing down with bolls, notwithstanding I have been visited with most unprecedented drouth the whole season, and plant on Prairie land twenty-five years under hard cultivation, without manure. It would be hard to imagine a more intractable soil than mine, or one more dependent upon seasons; yet, my average crop, for a series of years, has been a standard bale (400 lbs.) to the acre, and ten bales to the hand, made, picked and ginned without help. I do not boast of this result, as I am confident it might be surpassed with my seed, on other lands in my immediate neighborhood. But taking the land and other circumstances into view, it points clearly to the advantages to be derived from long purified seed. I am frequently asked why I do not sell my seed? and I generally reply: that there has been so much humbuggery in Cotton seed that I do not like to take the trouble to bring my seed into notice. In short, that Cotton seed will not sell now at speculative prices, and to sell them at merely remunerative prices, costs more than they come to.

I have been told that there are many large planters who, if they knew the value of my seed, would be glad to furnish themselves at reasonable prices every year, or at least, every two or three years, as they could not give so much care and attention to selection as I have done. I am unwilling to enter the list of cotton seed speculators with a long array of certificates and recommendations; but will simply say that I shall keep the three above named varieties pure for my own use; and if any one wishes to begin selecting with seed already long selected and very pure, he can have them at a price that will make them cheap to him. I wanted to say something more upon the type of the cotton plant, but, having already trespassed upon your space too far, must defer my remarks for the present, but will give them, if you request, at some future day.

A. W. WASHBURN.

YAZOO CITY, Miss., 1855.

[Let us, by all means, hear from you on the "type of the cotton plant."—Eps.]

MILCH COWS AND ESCUTCHEONS.

WHEN Guenon's theory of determining the value of milch cows by the growth of hair on its thighs above and adjacent to the bag, was first introduced, the idea was received with a good deal of scepticism. Time has wrought changes. At a late convention, by the legislative club of the State of New York, one of the speakers gave the evidence in relation to Guenon's theory :

"M. Guenon, a French writer, has discovered certain indications which he claims to determine the milking qualities of cows. This he calls "escutcheons," being the hair which grows upwards, (contrary to the general rule,) on the udder, thighs, and hinder part of the body. It is easy to distinguish the escutcheon by the upward directions of the hair which forms them. I cannot go into detail here upon the system; but would refer to the work of M. Guenon itself. But to show that it is estimated worthy of notice, I will allude to the testimony of those who have given attention to it.

"Mr. John Haxton, in a work published in 1853, entitled, "How to choose a good Milch Cow," in reference to the indication of a good milch cow, p. 178, says, "The writer has examined many hundred of dairy cows in Britain, and the conclusion arrived at in regard to Mr. Guenon's test of judging of the milking properties of a cow by the development of the *ecusson*, is, that, in a very large majority of cases, it is borne out by facts." In a London dairy, belonging to Mr. Riggs, 31 Edg. ware road, where about 400 cows are kept, and where nine-tenths of them are far above average milkers; the *development* or *upward* growth of the hair on the posterior part of the udder, thighs and perinæum, was too remarkable to be accounted for by accidental causes. As well might it be said that all other tests, such as length of head, softness and flexibility of skin, and wide quarters, were accidental, and had no reference to the milking properties of a cow. When a phenomenon presents itself over and over again, accompanied in a majority of cases by certain results, we may be certain that it is not accidental, but natural;—and while we may be unable to account for these results upon satisfactory grounds, it is neither philosophical or prudent, to deny or ignore the connection between the one and the other; and thus to forfeit the advantages which the fact itself is calculated to afford."

The late Mr. Phinney, of Massachusetts, a very careful and critical observer, made examination of a large number of milch cows, and found in a ma-

jority of them that were good milkers; these developments well marked. He conversed with a large number of intelligent gentlemen when he was abroad in 1851, in Great Britain and France and found but one opinion as to the general character of the animals which possessed these developments. And so far as we have learned the views of gentlemen in this country who have given attention to this subject, the result has been the same.

"I think it may with safety be affirmed, that this 'one principle' is established—that, all things being alike, as regards shape, texture of skin, &c., cows with well developed escutcheons will, in a large majority of cases, be found to be the best milkers, and above an average; while, on the other hand, those with very small escutcheons, will be found under, or at most, not above an average in their milking properties.

"In calves the escutcheons show the shapes which they are afterwards to assume. They are more contracted only because the parts which they cover are slightly developed. They are easily perceived after birth, but the hair which forms them, is long, coarse and stiff. After this hair falls off, the escutcheons of calves resemble those of cows, though of less size. This will enable the farmer to save such calves as will probably serve him as good milkers."—*American Farmer*.

VALUE OF FARM-YARD DUNG.—"Farm yard dung is the paramount means of fertility on the farm; it is the farmer's sheet-anchor, and every other manure must be regarded only as auxiliaries. It is indispensable in a dry season, and superior to all manures then."—*Stephens' Farmers' Guide*.

Truer words were never written, and yet how few farmers take the proper means to accumulate farm-yard manure, and preserve it from deterioration, as they should. Manure accumulated in the barn-yard, if properly cared for, would be worth twice as much as is the ordinary stuff which is carted out upon the fields in spring. Care should be taken to prevent the dung of the stable from becoming fire-fanged, which can be effected by mixing it with the dung of the cows. Care should be taken to so construct the cattle yards, as to prevent the escape of the urine, and every possible means be taken to preserve the manure from deterioration, as also to add to its quantity.

American Farmer.

THE man who does most has the least time to talk about what he does.

USE OF LIME.

We have found on inquiring of farmers, both in this country and in England, a great diversity of opinion as to the action of lime upon the soil. While in England in 1851, we were presented at a lecture before the Royal Agricultural Society, on the uses of lime, by Prof. Way, and gave the substance of the lecture, with the remarks of several practical farmers, who were present, on the subject in a letter published in our Journal. It was also mentioned, that Prof. Way was making investigations, which would, in due time, be given to the public. By the annexed notice, from the *Mark-Lane Express* of the 24th of June, it will be seen that Prof. Way has given the subject a most careful and thorough examination. As soon as the details alluded to in the close of the article shall be received, we shall publish them—believing that they will be found of the greatest importance to the agricultural interest.

Southern Planter.

ACTION OF LIME.—At a Weekly Council of the Royal Agricultural Society, Professor Way delivered before the members a lecture on the results of nine months' investigation into the condition under which lime affects the absorptive powers of soils in reference to ammonia. These rules were numerically represented in a small table, containing only four vertical columns, intersected by as many horizontal spaces; but would prove, as Professor Way remarked, of a permanent value, worth all the time and labor bestowed upon their production, if they should be found to lead to the establishment of any new principle in agriculture. His lecture was chiefly occupied in the discussion of these results and of the clue they might possibly give to explanations of the mode in which lime acted upon soils as a manure. The two principal facts ascertained by those experiments appear to be the following: First, That all soils, more or less, even beyond the depth of twenty feet, are found to possess a certain quantity of ammonia, derived, as Professor Way supposes, from the fishy and vegetable matter of beds of lakes, rivers, no bed of clay whatever, he thought, being entirely free from ammonia. Second, That the addition of lime to a soil set free one-half the ammonia it contained; thus acting, in the first instance, as a "stimulant" to vegetation, but as an exhaust of the stock of ammonia already in the soil or to slowly derived from the atmosphere, if applied in large quantities. The principal recommendations were: 1. That liming should take place periodically at short intervals, not more than 8 to 10 bushels per acre being used every year, or every two years; lime, under such circumstances, he thought, would be one of the most useful adjuncts of the manure. 2. That lime when slacked and mixed with

water, forming what was known as "milk lime" should be added to tank-water, and distributed by means of piping as in the case of Mr. Mechi's operations at Tiptree or Mr. Kennedy's at Myre Mill.—Professor Way, in the course of his lecture, entered into the chemical machinery of the double silicates in the soil, by which the action of lime was regulated; and with the experiments he had instituted for showing, in strong comparative contrasts, the results he had obtained. He also pointed out the great importance of giving, to land, by means of suitable cultivation, that condition under which it would best act as an absorbent of ammonia from the atmosphere. He has drawn up a complete statement of these details, which will be submitted in due course to the members.

PERFORMANCE OF THE STEAM FLOW IN ENGLAND.

As we were coming away from the trial field, impressed with the sentiment that "the steam cultivators were a failure," and soaked with rain, old Aquarius having turned on his taps, as if to give old Walter Scott the lie for saying the "sun shines bright on Carlisle wall," the stewards, Mr. Amos, and some few other lucky individuals, received intelligence that another steam plow had started in a field half a mile off. Making the best of our way to the light land trial field, there sure enough stood a portable engine in one corner, with ropes and pulleys, and a plowing machine all in action. The engine was that belonging to Mr. Lee, of Wisall, and the plow and tackles are the invention of Messrs. Fisker, of Stamfordsham, manufactured by Roger, of Stockton-on-Trees. It has been tried at Perthshire, last winter, being actuated by a water-wheel: this being the first day of its trial with steam-power. The whole apparatus is novel, and we may say, uncommonly promising. Instead of a heavy wire rope to drag the plow frame by main force, a light endless hemp rope, only three-eighths of an inch thick, communicates power to the plow carriage, which we may call locomotive, as it propels itself in the following manner:—a grooved wheel set in motion by proper spur wheels from the rigger actuated by the hemp rope, winds; as it were, along a strong wire rope laid upon the ground; and the frame being thus carried slowly forward, drags plows or other implements after it. The hemp cord does not touch the ground, but is held up at every 40 yards distance, by a "horse," or small friction pulley frame, about 3½ feet high. This cord travels at the rate of 20 miles per hour; but the speed being reduced by the wheel work upon the plow carriage, the latter travels only 2 miles per hour. When two plows are in work at once having the draught of four horses, the strain upon the rapidly running

cord will thus be less than half a horse's draught. We were informed by the exhibitor that a 4-horse engine is sufficiently powerful to work two plows, and that with 4 cwt. of coal it will plow 4 acres in a day, the expense for labor being only that of two men and a boy. If this be strictly the fact, we have a complete invention able to plow light land at a cost of say 3s. per acre. That it is not far from the truth we are sure, for we ourselves saw one plow drawn at the rate of at least two miles per hour when the engine had only 7 lbs. or 8 lbs. pressure upon the square inch, and this was an engine of 6 horse power at 40 lbs. pressure. To be sure, the land had been previously plowed, pulverized, subjected to the trial of all sorts of drills, and been afterwards well trampled by hundreds of people, and consolidated with rain, so that the possible quantity and quality of the work could not well be ascertained. The plowing we saw was respectably though roughly done, but there was one point really performed—the furrows were well turned. If a steam cultivator can invert the soil thoroughly and cheaply we may put up with a little imperfection in the straightness of cutting and evenness of laying. The method of anchoring the pulleys, and the arrangement of the pulleys and ropes, is very ingenious; and can hardly be explained with brevity. The anchorage consists of a plate or plow, a few feet in length, and 8 inches only in depth; this can be easily drawn forward in the ground without the trouble of digging holes, taking up, setting down again, &c., and yet it presents a sufficient resistance sideways to the pull of the ropes. A wheel, pinion and crank, on each anchor is used to draw it by means of a rope towards a fixed post, when it is required to be shifted. The arrangement of the ropes about the anchored pulleys is like that of the chains in a travelling crane, the anchorage being shifted forwards at intervals without altering the length of the rope. The plows are not rigidly attached to the travelling frame, but are hung by short iron beams, which form levers, having a slight degree of play up and down. There are four plows—two before and two behind the carriage pointing opposite ways, a neat lever movement lifting two out of work and dropping the other pair of plows in; so that the machine can plow both ways without having to turn round at the land's end.—*London Ag. Gazette.*

TO CLEAN PAINT.—Smear a piece of flannel with common whiting, mixed to the consistency of common paste, in warm weather. Rub the surface to be cleaned quite briskly, and wash off with pure cold water. Grease spots will in this way be almost instantly removed, as well as other filth, and the paint will retain its brilliancy and beauty unimpaired.

From the Country Gentleman.

DRAINING LANDS BY WELLS.

You wish to know if land can be drained by wells. I have made one experiment only, and that was entirely successful. I owned a piece of land on which there was a basin of about three-fourths of an acre, which received the surplus water of at least ten acres. It would sometimes be from two to three feet deep in the centre. The water stood in the basin at least eight months in the year, and the basin was full every hard rain the other four months. On the 3d of August, 1841, I dug a well nine feet deep in the centre of the basin, and came to living water which rose very rapidly, so much so that I expected to see it run over the top in a short time. I think the water rose at least two feet in ten minutes and then stopped, and remained at that depth until a heavy rain of three days. I then went to look at the well, expecting to find it full and running over; but to my utter astonishment, there was not more than two and a half feet water in the well. It had risen about four feet during the storm, I should judge, by the marks on the side of the well. There must have been a great quantity of water run into the well, as at least ten acres discharged its surplus water into it, and the rain fell in torrents during three days. I then dug four open drains leading in to the well, and the land has been sufficiently dry for wheat, corn, oats or grass, ever since. It has been in grass for the last twelve years, and has borne a heavy crop of first-rate hay.

I should advise, in all instances, to dig until you come to living water, and then the water will pass off in the fissures of the earth. I have not the least doubt but that almost any spring can be drained by digging a well at a little distance, and leading the water into it. I would state that I filled the well full of stone, thinking it would be cheaper to dig a new one than to stone in and keep it covered, if it should fail to carry off the water.

ASA HUBBARD.

MIDDLETON, Ct.

IMPORTANT, IF TRUE.—A citizen of Orange firmly believes and maintains the theory that the Chinch Bugs are eating up the Joint Worms! If this be so, then there is good reason to hope and expect that the Chinch Bugs will, in their turn, die of *dyspepsia*; for they are by nature vegetable feeders, and animal food will hardly agree with them. It is to the farmer a delightful operation truly, if the Chinch Bugs eat up the Joint Worms, and get poisoned by doing so. It would be another version of the game played by the cats of Kilkenny, which, according to the story, fought until they had eaten each other up.

American Sentinel

EFFECTS OF FEEDING STOCK UPON THE
CORN-FIELD PEA.

MR. EDITOR: I have read with much pleasure the observations of Mr. Edmund Ruffin in your May number of the *Soil of the South*, upon "the facts and causes of injury to animals from eating peas," and by your editorial invitation, I will offer you my experience upon the same subject, although I have not lost the first animal from the effects of the corn-field pea.

I perhaps had better premise, by saying to you that I am a young planter, not having planted but five years. When I commenced planting, I sought all the agricultural information that I could get, by books, agricultural papers, and information from persons that I knew to be experienced upon the subject upon which I sought information. I became the subscriber to seven different agricultural papers, and for fear some old *anti-book* farmer may ask why take so many papers, I will say that I did so for the purpose of having the experience of others upon the various subjects connected with "practical husbandry," and to apply that experience, according to my judgment, to my own farm; as I am about to get off the subject I started upon, I will return to it.

I have cultivated the corn-field pea ever since I commenced farming, and have made pretty fair crops, and have never gathered only enough for seed and a few for the negroes and whites also—leaving the balance of the crop in the field to be pastured off by the stock. I plant my peas in the month of May among my corn, using principally the red or "Tory Pea," which pea will lay on and in the ground all the winter, and not rot or decay, and, at the proper season in the spring, come up. All other varieties of the pea, that I have tried, will rot after the first wet spell in the fall. I have this year one field of corn containing one hundred and twenty-five acres, every acre of which is already planted with the Tory Pea. I have four acres of ground peas and five acres of sweet potatoes; I also have a great many pumpkins planted in the same field. In the fall, when I gather my corn, I gather a few of the sweet potatoes—as many as all of the hands can use before frost, and some few of the pumpkins for stock, &c., &c. Through this field passes a tolerable large stream of water, which I consider indispensable. I place three or four troughs in which I constantly keep ashes sprinkled with salt. My hog feeder tolls the hogs, turning them in near the stream of water, giving them just as much corn as they can or will eat. The hogs will first commence on the ground-pea and potatoe patches, eating alternately of each, and it will be some two weeks or more (if the ground peas and potatoes are pretty good) before you will discover that they have touched the "Tory Pea."—

Now and then you will see where they have taken a few mouthfuls out of a pumpkin. I keep the hogs on this field until I gather the adjoining field of corn containing about one hundred and forty acres, which is also in peas. I have in this field, five acres of ground peas and five acres of sweet potatoes, with plenty of pumpkins and water. If it is the season for saving sweet potatoes, I gather and save all the large potatoes out of this field for winter use. I gather about twenty bushels of ground peas for seed the ensuing year. I gather as many pumpkins as I can well save and feed away before rotting. I also gather from this field whatever peas I may wish to save for use or sale. I then remove my troughs and keep ashes and salt in them as in the first field, and have the hogs turned in.

My horses, mules, cows, sheep and hogs are all indiscriminately turned in, but never hungry, always full, salted and near the water. I do not think that I have ever lost an animal from the effects of the corn-field pea. But to the contrary, all my animals come out fat and slick, particularly the hogs. And as the best evidence of this, I never have had any bacon to buy, but every year have some fine hams to sell, for which I have never failed to obtain fifteen cents per pound. Any man can come to my smoke-house now and see what a handsome lot of fine yellow bacon I have in it. He can then go to my hog lots when my hog feeder blows his horn, and see and count over two hundred hogs squealing for their daily allowance of corn. It is my opinion that if a hog is well fed in winter, and grows fat on corn, and is then neglected and not fed in the spring, and allowed to shift for himself on grass, nine out of every ten will die.

If every farmer will furnish his hogs with plenty of good sound grain of any kind, I have no hesitation in saying that he will raise an abundance of meat. But on the contrary, if he calculates to feed man or beast on unsound provisions, sickness and death will be the natural consequence.

This article is already spun out too long. I may hereafter write you on other subjects, according to my experience in "practical husbandry."—*Soil of the South*.

PROFIT IN KEEPING FOWLS.—An intelligent farmer lately published the following result of his experience in keeping fowls: He kept thirty-six hens last year, that yielded him three dozen eggs, besides one hundred and twenty-five chickens. The net proceeds of the sale were \$59.37, the family having had, of course, what eggs and poultry they wanted for their own consumption besides. The whole cost of the grain for keeping the hens was a fraction over \$4, leaving a clear profit of \$55.

BUCKWHEAT—ITS HISTORY AND USES.

The buckwheat crop of the United States, compared with most of the other grains, is of very insignificant account; and yet, its cultivation furnishes not only a very palatable, but also a very healthful article of diet. The great objection to its use lies chiefly in the too frequent unskillfulness manifested in its preparation for food. Properly cooked, it affords the best material for pancakes in the whole range of cereals; while, on the other hand, improperly prepared, it lies when eaten almost as heavy in the stomach, and is about as easily digested, as so much lead.

There have been great differences of opinion as to the nutritive qualities of buckwheat; it being supposed by many of little account on the score of economy, and that an individual using it as an article of diet, would require as large an amount of other food, as if the buckwheat cakes had not been placed upon the table. No doubt any person with a good appetite will eat more heartily at a table spread with palatable food, than at one of the opposite character, and on that account may make away with an extra plate of buckwheat cakes; but the analysis of the grain is conclusive evidence that this grain is highly nutritious. Wheat, which is universally recognized as the most valuable grain raised, and the best adapted, all things considered, as an article of diet, contains, say twelve per cent of gluten, sixty-eight per cent. of starch, and five per cent. each of sugar and gum in every hundred; while, at the same time, buckwheat contains over ten per cent. of gluten, fifty-two per cent. of starch, and eight per cent. of gum and sugar. This analysis shows buckwheat to compare quite favorable with wheat; and of course with corn, barley, or oats, the results will be still more favorable. In the above analysis of the grain of buckwheat, about twenty-seven per cent. of the residuum must be allowed for husk, while in wheat not over one-third of that amount is produced; and hence, in the comparison of flour for the two grains, instead of the grains themselves, that of the former will stand in a still more favorable light.

Buckwheat was brought into Europe from the North of Asia, and was first cultivated in England, about the year 1600, and is principally used in that country at the present time as food for pigs and poultry. It is raised to a limited extent in most of our Northern States, but chiefly in New York and Pennsylvania; the latter State producing in 1850, according to the United States Census Report, 2,193,692 bushels, and the former 3,483,933 bushels—the two together furnishing five-eighths of the whole amount raised in the country. When it is considered that in the same year there were provided about 200,000,000 bushels of corn, and other grains in pro-

portion, the nine millions of buckwheat dwindles into comparative insignificance.

There are many good reasons for paying more attention to the raising of this grain, among which may be enumerated the following: It will thrive on poor land, where other crops will fail; it is easily cultivated, can be sown after all other crops (except turnips) are in the ground, and before haying time comes on. June and July are the best months for seeding. The grain finds a quick sale at remunerating prices, and brought readily in this market last season one dollar per bushel. Portions of the grain come successively into blossom, and if the earlier should be blighted the succeeding flowers will still frequently produce a good crop; the straw is nutritious as an article of fodder, and when properly cured, sheep will eat it almost as readily as they will hay; the grain makes excellent feed for poultry and other domestic animals are also very fond of it. It is stated that horses will fatten on it very rapidly when at rest, but that working or driving very soon reduces their flesh; and it is, therefore, not recommended as food for them. Buckwheat blossoms contain much saccharine matter, and bees extract large quantities of honey from it. The honey, however, is much inferior, both in taste and color, to that obtained from other sources. It is of a dark smoky appearance, and possesses a strong and rather unpleasant flavor.

The green crop has been much used in some localities for plowing under as manure, and possesses the advantage of producing a crop on land where clover would fail; and also of being sown and plowed under the same season. But aside from these considerations, it is not equal to some of the grasses for this purpose. The principal value of buckwheat is for pancakes, of which great use is made throughout the Eastern and Middle States. It is usually packed in small cotton bags, containing from five to twenty-five pounds of flour each; and in this shape finds its way during the season of winter into most families of the abovenamed States. The manner of preparing it for food comes more properly under the head of "Domestic Economy;" but it will not be out of place here to say, that with very little pains, any housewife can make light, palatable and nutritious cakes. In the form of batter it is easily made light by the same appliances which render wheaten flour fit for baking.

The price of buckwheat flour last year, bore the usual ratio to the price of wheat, and the flour sold in our market at times as high as five cents per pound. At such a figure, with the usual appliances of butter and syrup, of course pancakes could only be indulged in by the mass of men as an occasional luxury; but from present appearances, the harvest

will be more plentiful, and the price within reach of all who subscribe to the doctrine that warm buckwheat cakes and maple molasses are grateful to the palate, good for the stomach, and worthy to be reckoned among the best dishes of a luxurious table.

The former practice of threshing buckwheat in the open field and upon the bare ground, and then scraping up with it a quantity of free soil, is mostly abandoned at the present time. Such a practice is unworthy of a good farmer, and ought to render his grain unsaleable. We have very vivid recollections of a fine field of the grain threshed in this way in our youthful days, and of the gritty flour produced therefrom. Secured in such a way, it will do for poultry, because grit and gravel stones are a necessary constituent of their food; but the functions of mastication in the human species, are performed in another manner, and without any necessity of the above concomitants.—*Southern Planter*.

GREEN-MANURING.

VEGETABLE substances, in their green and succulent state, are powerful fertilizers, when thoroughly incorporated with the soil. The most pertinent explanation of this fact is furnished by the consideration that they supply the identical elements that future crops require; in the same manner, that out of the materials of one house, another may be elaborated, and it is true that many of those materials exist in such union and affinity, as renders them especially adapted for the nutrition of the future crop; for it is a recognized truth in physiology, that both animals and plants take up and assimilate from their food a portion of their bulk in the precise form in which it exists in that food.

The practice of growing crops for the special purpose of plowing in as a manure for succeeding crops, is not justified by this consideration merely. It would seem to be a waste of time and material, to convert the elements of vegetable growth into living forms twice before they are made profitable. Why grow a lupine or clover plant one season, to be buried, in order that from its remains, a cabbage or a turnip may be produced? Why, if you build a house, do you not fetch the materials direct from the quarry? These questions would be unanswerable, did plants obtain all their food from the soil. But such is not the case, a great portion of the bulk of green crops is obtained from atmospheric sources; and after a green crop is plowed in, the soil necessarily contains more of the organic elements essential to vegetable nutrition, than it did before the crop was sown; it is richer, in fact, by the carbon, oxygen, hydrogen, and nitrogen, which the green crop has obtained from sources independent of the soil. In the manner, the crop grown after a green crop has

been plowed in, has the advantages of a ready supply of mineral elements, which have been worked up by the roots of the fertilizing crop from the soil and subsoil, and which in many instances, owing to their sparing solubility, are with difficulty obtained under ordinary circumstances.—*Progressive farmer*.

JAPAN PEA.

SEVERAL years ago we received this bean, (wrongly called a pea,) from a correspondent in Europe, who spoke of it as something new in the leguminous way. Since then it has been distributed by the Patent Office, and highly recommended for domestic use and as good for stock. This season we have grown it in sufficient quantity to test its value for either purpose. Unless it possesses hidden virtues it is not worth cultivating, and may be classed with the number of horticultural humbugs lately imposed upon the public desire for novelty.

The Japan bean grows two to three feet high; the stalk is quite woody, with very few side branches; the legumes or pods are produced in twos and threes at the axles of the leaves; each legume contains two or three small round beans the size and shape of a "Tom Thumb Pea," and the flavor is not unlike that pea when fully ripe; the legumes are covered over with a stiff fuzz. Although this bean may be planted early in the spring, it will not mature before late in the fall, showing that our seasons are too short for its growth. It is totally unfit for food while green, and not superior to the common pea when ripe. Animals have no relish for the stalks, especially after the fruit is ripe; and when we consider that it is a great impoverisher of the soil, it is an injury to cultivate it as a crop.—*Pittsburgh Western Horticulturist*.

AGRICULTURAL PROFITS.—The Leesburg (Virginia) Washington states that Captain George Kephart purchased a tract of land in Loudon county, Va., four years ago, which cost him five dollars per acre; from a field of this land, containing 100 acres, last fall he got 400 bushels of corn, worth at least five dollars per barrel. After cutting off the corn he put in wheat, sowing two tons of guano on it, which yielded him 2,160 bushels and some pounds last harvest, worth two dollars per bushel. In two years, on this field, which cost two years ago five hundred dollars, he got upwards of six thousand two hundred dollars.

It has been ascertained by experiment, that a cow will drink about eighty-seven pounds of water in twenty-four hours.

RANCID butter, it is said, may be rendered sweet and good by churning it in new milk. Try it.

From the American Farmer.

HOME-MADE MANURE—THE GUANO QUESTION.

CARROLL Co., Dec. 7, 1855.

Messrs. Editors: I see going the rounds of the papers, an article from the "Maine Farmer," on the subject of "The Leaf Harvest," to which I think you would do well to call the attention of your patrons. The Guano mania has thrown many of us off our old track. We spend hundreds of thousands of dollars for an article we might do without, if we would only use up the means every one has on his own farm. Let us try and reform, keep the money we are sending out of the country for guano, and apply a part of it to making local manure. I know that a prejudice exists against leaves, as utterly useless, but it is a great mistake. Leaves contain more potash than any other part of the tree, except the bark, and much more I believe, than the straw of our grain. Add to this, when dry, they absorb the liquid droppings of the stock. Leached bark, of the tan-yard, will also be found an excellent means of increasing home manure. I have made by these means, from my hogs alone, from 30 to 40 four-horse wagon loads of the best kind of manure, a season. To be sure, I have a well arranged and roomy house with out-pens for these animals, at a cost of something like \$200, which is saved by the facility of feeding, and the less quantity of grain to fatten, and the manure in the bargain.

There is another matter, to which the attention of the farming community ought to be called. Do we not all see the disproportion that exists between the price of grain and the price of meats? This has been the case for some years past. I speak more particularly in reference to the two past seasons;—and yet our wheat and corn has gone to market by the bushel, while our acres have been calling to us to feed some at home, so they may be fed. Let us have more stall-fed beef and sheep and pork to send to market, and our acres will give a better return for what we sow.

I was forcibly struck some years ago with a remark made either by Arthur Young, or Sir J. Sinclair, in a correspondence between them and Genl. Washington, on the disproportion between the amount of stock kept on farms in this country, and the number of acres cultivated,—intimating the exhausting tendency of such a course.

I have just received your number for the current month—glad that farmers feel indignant at the course pursued by the managers of the Guano monopoly—hope they will make a powerful effort to be independent of this foreign fertilizer. If we do as we ought, we shall realize more clear gain in the end, and enjoy our independence in the bargain. Nothing like having our means under our own control.

GUANO—ITS HISTORY.

GUANO, as most people understand, is imported from the Pacific—mostly of the Chincha group, off the coast of Peru, and under the dominion of that government.

Its sale is made a monopoly, and the avails to a great extent, go to pay the British holders of Peruvian Government bonds, giving them to all intents and purposes, a lien upon the profits of a treasure intrinsically more valuable than the gold mines of California. There are deposits of this unsurpassed fertilizer, in some places, to the depth of sixty or seventy feet, and over large extents of surface. The guano fields are generally conceded to be the excrements of aquatic fowls, which live and nestle in great numbers around the islands. They seem designed by nature to rescue, at least in part, that untold amount of fertilizing material which every river and brooklet is rooling into the sea. The wash of alluvial soils, the floating refuse of the field and forest, and above all, the wasted materials of great cities, are constantly being carried by the tidal currents out to sea. These, to a certain extent at least, go to nourish, directly or indirectly, submarine vegetable and animal life, which in turn goes to feed the birds, whose excrements at our day are brought away by the ship-load from the Chincha Islands.

The bird is a beautifully arranged chemical laboratory, fitted up to perform a single operation, viz: to take the fish as food, burn out the carbon by means of its respiratory functions, and deposit the remainder in the shape of an incomparable fertilizer. But how many ages have these depositions of seventy feet in thickness been accumulating!

There are at the present day countless numbers of the birds resting upon the islands at night; but, according to Baron Humboldt, the excrements of the birds for the space of three centuries, would not form a stratum over one-third of an inch in thickness. By an easy mathematical calculation, it will be seen, that at this rate of deposition, it would take seven thousand five hundred and sixty centuries, or seven hundred and fifty-six thousand years, to form the deepest guano bed. Such a calculation carries us back well on towards a former geological period, and proves one, and perhaps both of two things—first, that in past ages an infinitely greater number of these birds hovered over the islands; and secondly, that the material world existed at a period long anterior to its fitness as the abode of man. The length of man's existence is infinitesimal, compared with such a cycle of years; and the facts recorded on every leaf of the material universe, ought, if it does not, to teach us humility. That a little bird whose individual existence is as nothing, should, in its united action, produce the means of bringing

back to an active fertility. whole provinces of waste and barren lands, is one of a thousand facts to show how comparatively insignificant agencies in the economy of nature, produce momentous results.

London Farmer's Magazine.

IMPORTATION OF ALDERNEY CATTLE.—William C. Wilson, Esq., of Springdale, Baltimore County, has recently imported two thorough bred Alderney Cows, which have arrived safely at his farm near this city. We paid a visit to Springdale, during the past month, and had an opportunity of examining his herd of this favorite milking breed of cattle, of which he has some 12 or 15 head—among them his recent importation, which had recovered from the fatigue and confinement of their voyage. They were selected from the best herd in the Island of Jersey, through the influence of John A. Tainter, Esq., of Hartford, Connecticut, and are believed to be unsurpassed in all the points of this breed of cattle, by any that have ever reached this country. They will be exhibited at our coming State Show, with the bull of the same breed, (purchased by J. H. M'Henry, Esq., of this city,) which has got in Jersey, and is out of Mr. M'Henry's imported Cow Commerce. These Cows cost about \$500 for the two, delivered in this city; but twice that sum would not induce the present owner to part with them, satisfied, as he is, that they are as near the marks of perfection established by the rules of the Royal Agricultural Society of England, as it is possible to attain.—*American Farmer.*

QUANTITY OF LIME PER ACRE.—"The practice hitherto has been to apply a large dose of lime at once, and not to repeat it during the lease. The motive for this practice I would look for more to the circumstances in which the farmer is placed in regard to the tenure of his farm, than to any reasonable expectation entertained by him of the action of the lime upon the soil in large quantity. It is felt with the application of lime as with the draining of the farm—the sooner it is done, and the seldomer done, the greater profit to him who does it. The opinion is gaining ground, however, that it is better for the tenant's interest to lime in less quantity at a time, and more frequently. It would appear, taking the average of the quantities of lime applied in different districts of the country, that about 8 or 10 bushels per acre per annum are applied to supply the supposed requirements of the land. It might therefore be better for the crops, and more prudent for the purse of the tenant, to apply 8 or 10 bushels per acre on the fallow every year during the lease, than 160 or 200 bushels per acre at onetime at its commencement."—*Stephen's Farmer's Guide.*

PAYMENTS FOR THE ARAROR,

SINCE FEBRUARY NUMBER.—\$1 Joseph M. Foy, Scott's Hill, New Hanover Co., N. C.; M. C. Nixon, Wilmington; Maj. G. H. Wilder, Raleigh; Rev. J. W. Litchfield, Lake Landing, Hyde County; Mordecai Lamb, New Salem; Isham Harly, Esq., Lewis Fork, Wilkes Co.; Walter Steele, Rockingham, N. C.; \$2 J. V. Little, Washington, N. C.; \$1 William Lea, Leasburg, N. C.; J. W. Cunningham, Cunningham-shire, N. C.; J. R. Siler, Franklin, Mason Co., N. C.; Washington Branch, Franklin, N. C.; Geo. B. Gordon, Bucklaud P. O., Gates Co., N. C.; V. A. Mc-Bee, Lincolnton, N. C.

CONTENTS OF MARCH NUMBER FOR 1856.

Alfalfa,	373
Alderney, Cattle, importation of,	383
Agricultural profits,	381
Be systematic,	361
B. F. Lunn, Communication of,	369
Buckwheat, its history and uses,	380
Corn,	360
Calves with sheep,	360
Clay soils, winter ridging of,	365
Cultivation, Economic,	371
Cotton, culture of,	374
Corn-field pea, effects of feeding stock,	379
Draining lands by wells,	378
Farmers' Clubs,	368
Farm-yard dung, value of,	376
Fowls, profit in keeping,	379
Guano, its history,	382
Green-manuring,	362
Hops,	369
Important, if true,	378
Japan Pea,	381
Lime, use of,	377
Manure, home-made—Guano question,	382
Meadows, improving of,	359
Mulching for winter,	366
Manuring, facts in,	373
Milch cows and escutcheons,	276
North Carolina, fruit culture in,	370
North Carolina, Grape culture in,	376
Oxen versus horses,	373
Pratt's ditch digger,	356
Posts, inverting of,	369
Premiums, contend for,	370
Performance of the steam plow,	377
Quantity of lime per acre,	383
Sweet potatoes, keeping of,	360
Soils, exhaustion of,	366
Turpentine,	353
The compost yard,	357
The Root crop,	360
The beasts that perish,	372
Tall weeds, how to plow under,	373
To clean paint,	378
What draining did,	361
Worn-out lands, improving of,	367

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-1f

MELON SEED.

LAST YEAR was notorious for the quantity and quality of that luscious Southern fruit, Water and Musk Melons, in this section. Those who visited Wilmington, know something about it. Melons have been raised here weighing from 35 to 50 odd lbs.—the large kind of Carolina Melons. We have some of the seed of these melons (both kinds) to spare, and will forward to persons wanting for \$1 per pint. Address C. H. ALEXANDER, Topsail Sound, New Hanover Co., N. C., Dec. 31st, 1855. 11—3t

HENRY PORTER'S

SHOE AND BOOT ESTABLISHMENT.

THE SUBSCRIBER has, and will continue to keep on hand, at his stand on the West Side of Fayetteville Street, an extensive and choice assortment of

BOOTS AND SHOES,

suitable for Ladies, Misses, Gentlemen, Boys and Servants, of every description and for all seasons; to which he respectfully invites the attention of purchasers, promising a good article on as good terms as can be afforded anywhere in this Market.

He also keeps first-rate workmen, and will mend or make Shoes or Boots to order, in the very best style.

He will likewise furnish the trade with materials at moderate rates. Everything warranted.

HENRY PORTER.

Raleigh, Dec., 1855.

9—3t.

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring.

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

SCIENTIFIC INFORMATION FOR THE WHOLE WORLD.

CHAPMAN'S GREAT DISCOVERY.

THE MONTHLY RAINBOW, or Chapman's Precalculations for elementary changes, based upon the discovery of the physical laws and harmony of electrical action pervading the solar system, as involved in the differing effects of light modified (or polarized) by differing angles of reflection on a large scale. This important discovery of the laws of nature which regulate the changes of the elements constitutes a subject of magnitude and importance, perhaps unsurpassed by any other on the pages of historic record. The surprising accuracy with which Dr. Chapman is enabled to pre-calculate all elementary changes predisposing more to storms, earthquakes, annulars, &c., and also atmospheric changes within the hour for each day, months in the future, and the physical effects on the health, feelings and humors of mankind, must be admitted by all unprejudiced minds to be of incalculable advantage to the whole human race.

In presenting the RAINBOW to the public, we do not claim it to be an infallible weather guide. But this much we do claim, that it will be found to be correct to the letter, eight times out of every ten. All we ask is a candid examination. Terms of RAINBOW, \$1 per year, in advance, 50 cents for six months.

CHAPMAN'S PRINCIPLES, or NATURE'S FIRST PRINCIPLES, cloth binding, 12mo., 200 pages.—Volume first contains a full explanation of the discovery to which Dr. Chapman has devoted the last nine years of close observation. Published every six months, (March and September,) price \$1-per volume, for which it will be sent, post paid, to any part of the country. First volume now ready.

Address CAMPBELL & Co.,

No. 73 South Fourth St. above Walnut, Philada.

Best Agents wanted in every county.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair, Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 25, 1855.

1-3

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOUSSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.


VOL. II.


RALEIGH, APRIL, 1856.

NO. I.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

 **TERMS.**—Published on the first of every month, at ONE DOLLAR A YEAR, *invariably in advance.*

 **Advertisements,** not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

From the Southern Cultivator.

GRASSES FOR THE SOUTH.

GUINEA GRASS—MEANS GRASS.

BY REV. JOHN BACHMAN, D. D., OF CHARLESTON.

EDITORS SOUTHERN CULTIVATOR: In my yesterday's visit to the Agricultural Fair at Atlanta, the pleasure I derived from meeting with many old friends, and others known to me by characters, and whom I was desirous of meeting, was somewhat marred on being reminded of my own negligence, in not having replied to several correspondents, who, for two years past, have written to me for my opinion of the grass recently introduced into the Southern States, under the name of Guinea Grass. I have several excuses which my partial friends, among the rest Col. Sumner, who had written very pressingly on the subject, would, I am sure, readily accept; but I think it the best and shortest mode to plead guilty to the charge of negligence, to promise amendment, and to give an evidence of it in this communication, which I am sure you will publish, if for no other purpose than that of enabling me to make an apology to those

who were entitled to better treatment at my hands.

To return to the grass, I will endeavor in somewhat of a professional habit, to show:

1st. What it is not.

2nd. What it is.

3rd. Offer a few reflections on this singular and providential production.

1. It is not the Guinea Grass. Of this I can speak very positively. The Guinea Grass (*Holcus Polygamum*) bears a general outward resemblance to this variety—it is not unlike it in the shape of the leaves and in the rapidity of its growth, but in all other essential, particulars it differs very widely. I cultivated a square in my garden in Charleston, of the true Guinea Grass for more than 25 years. I procured the seeds from my neighbor, the late Mr. Poinsett, having, at that time, no other object in view than that of obtaining for my herbarium specimens of a grass that had contributed so largely to the then prosperity of Jamaica and other West India Islands. So luxuriant, however, was its growth, that I was induced to cultivate it as green food for my cows and horses. The great difficulty was in preserving seeds, which dropped as soon as they ripened, and the roots were invariably killed by the first frost of winter. At length, I adopted the plan of taking up a boxful of roots and removing them to the green-house during the winter, to be subdivided and transplanted in spring. Such, however, was the character of the delicate fibrous roots that, like those of the lemon grass (*Andropogon schæranthus*) similarly constituted, a great majority of the plants perished by the removal. My next and only

successful plan was to suffer a small patch to remain uncut, and run to seed, these, being very caducous, fell to the ground as fast as they ripened. The earth was, in autumn, covered with straw to preserve the seeds from frost. On being removed and the ground raked over in spring the seeds vegetated and the little plants were set out in rows. When, however, the Egyptian Millet was introduced, the seeds of which were easily preserved, I substituted it for the Guinea Grass. The true Guinea Grass is a tropical plant—has a delicate fibrous root like the wheat and rice, and not tuberous, like the variety which now, very improperly, goes under the same name. The latter has also a light stripe running longitudinally along the midrib of the leaves, by which it may easily be distinguished. There are many other characters which it is scarcely necessary to notice here, that draw a broad line of separation between these two very distinct species. As the grass recently cultivated under the name of Guinea Grass is a different species, it is right and proper that our present cultivated grass should not usurp a name to which it is not legitimately entitled. All honest men prefer to be called by their proper names and an *alias* always awakens suspicion. Our Southern planters would be laughed at were they to send specimens of this variety to Europe as the Guinea Grass. I will, before I close this letter, give further reasons why this erroneous name should no longer be retained.

2. What is it? In an address I delivered at Columbia, S. C., during the meeting of the Legislature in 1853, I added a note on the Grasses, in which I incidentally referred to this variety, named Guinea Grass, which I had then not seen, in these words: "I am inclined to think that the productive grass under the above name, spoken of by gentlemen in the interior, as producing no seed and is not injured by frost, can scarcely be Guinea Grass, and must be some other species." The opportunity has now been afforded to me of proving that my conjectures were well founded.

To save our Cotton planters from falling into hysterics, on having the ghost of an old enemy conjured up before their affrighted imaginations, I will premise by saying that it is one of the most productive grasses that has, as yet, been cultivated in our Southern country, and that there is no danger of its spreading in the Cotton fields.

The grass is a distinct and, evidently, a permanent variety of the panicled Millet (*Sorghum halapense*) and a native of Nubia, Syria and Greece, and is, in fact, a variety which has sprung out of the old and much hated and mis-named Means Grass.

When this grass was originally introduced, I purchased the plant I usually adopt under similar circum-

stances. I first endeavored to find out its name, and the country in which it had originated. After much trouble, I found it described in a single line in Linnaeus' 12th Edition. (*Holcus halapense*, in Tom. 8, page 660.) I next submitted it to the test of an experiment. I planted it in a square in my town garden. The soil was rich and the product was immense—equal to that of the best Guinea Grass or Egyptian Millet. It possessed, however, two properties that prevented me from recommending it. The seeds came up wherever they were dropped, and the tubers threw out runners, like the Nut Grass, and extended in one instance, by my own measurement, to the distance of thirty feet. In deference to the very reasonable fears of my neighbors who were threatened, as they erroneously supposed, by an enemy more annoying than the Nut Grass or Canada Thistle, I had the whole bed rooted up, which was no difficult task. My neighbors were as thankful for the riddance, as my pig was for an abundant supply of his choice food. One other slight digging up of stragglers exterminated the last root; so, having only kept it for an experiment, as a man keeps a rattlesnake or a pet bear for his own amusement, I could look the terror-stricken gardeners and planters in the face, and say with MACBETH to the ghost of BANQUO:

"Thou canst not say I did it;

"Never shake thy gory locks at me."

The notes of execration that were re-echoed from the seaboard to the mountains, against this pest, had scarcely subsided when a new discovery was announced. It was a grass possessing all the abundant growth of the Means Grass, having neither seed or runners, which was restricted to the bed where it was planted. This was a desideratum. Now for the name. As it bore some resemblance to the Guinea Grass, that name was improperly applied to it. It was stated that the true Guinea Grass had been planted by the side of it, and that, in time, all were alike. The same results were produced in my own garden with the Means Grass by the side of the Guinea Grass. The secret was that the latter was killed in winter and the former lived. There was no blending, but a supplanting of species.

When the specimens of this peculiar grass were sent to me by my friend, Col. Sumner, I was absent from home; the labels had been misplaced and I had no opportunity of examining it until yesterday; when I saw it in a lot at Atlanta, cultivated by Mr. Peters, from which I was supplied with specimens of the roots, stalks, and the infertile florets.

My first examinations were directed to the inquiry whether it might not prove to be a hybrid between the Means Grass and the Guinea Grass, or some oth-

er species. Hybrids, it is known, are infertile; but they possess characteristics which assimilate them to both species, and plainly show their double origin. This, therefore, could be no hybrid, since it resembled the Means Grass and no other.* The character of the roots is very peculiar, and belongs to few other species of grass, and to none with whom this could have hybridized.

It was not difficult to ascertain that this was a variety of the Means Grass, possessing such peculiarities as to call forth questions very interesting to the physiologist. Varieties are known to spring up in all animals and plants subjected of domestication or culture. All our improved breeds in domesticated animals and poultry are varieties, produced not by the slow process of gradual change, but by the sudden and inexplicable appearance of varieties that, by being kept separate, will continue to perpetuate the same varieties to the end of time. The same may be said of all our vegetables, grains, cottons, &c. Some of these varieties are peculiarly striking, as is the case with corn where each grain is covered by a separate husk—the pomegranate cotton, and the remarkable varieties in many kinds of fruits.—Occasionally a variety springs up which bears fruit, with infertile seeds. I have frequently seen this in the Apple, Pear and Plum, and once in a Persimmon tree. Such a variety could only be propagated by any of the modes of grafting, which is simply an extension and perpetuation of that particular plant, and could be effected in no other way since it bears no seed. The little fruit called the currant, bearing no seed, was produced in Zante, on the Mediterranean, from the common grape (*vitis vinifera*) of that country. It has been perpetuated for many ages and is an essential ingredient in puddings and cakes in every part of the civilized world where luxury abounds. In all probability, a single plant only of this variety was produced from seed, but it has been multiplied and perpetuated by layers, cuttings, &c. It is, therefore, the same vine, every layer being only a part of the old plant. Our common Strawberry belongs to the class Icosandria, containing stamens and pistils on the same plant and in the same calyx. In some of the varieties, staminate or male plants as they are called, are produced. These, when transplanted, as far as my observation goes, never produce pistillate, or fruit-bearing plants.—Thus, a bed of strawberries without any fruit may be perpetuated. One of our common shade trees in Charleston, with the ridiculous English name of

"Tree of Heaven," (*Ailantus glandulosa*) in its native country, China, belongs to the class Polygamia, viz: having male and female flowers in different parts of the same tree, or on different plants.

In our Southern States, all the trees of this species I have examined have become dioecious, viz: all the male or staminate flowers are on one tree, and all the fertile florets on another; thus throwing the plant completely out its of original class and order. The female tree bears many seeds which are pests in our gardens; I removed all the latter, leaving the former, and I now have the benefit of the shade without the annoyance of the seedlings. I have given these examples to show that the production of infertile varieties of plants is not peculiar to the variety of grass under consideration, and that when produced they may be perpetuated to the end of time by the roots or cuttings. I have not an opportunity at present of examining the seedless variety of the Bermuda Grass, but strongly suspect that it is a seedling variety produced from the Bermuda Grass, (*Digitaria dactylon*.)

The rose bush which produces what is called the green rose, is a variety which originated from the seeds of the common daily rose. It has been known for fifteen or more years. It was produced, as I was informed, in Wilmington, N. C. I saw it in Columbia and had a plant in Charleston. In this case the seeds produced a variety, in which the stamens, pistils and petals were transformed into leaves, possessing the form of the rose, with the bright green color of the leaves. The petals of this singular production, were, in reality, no longer flowers, with the aiding properties of the petals of the rose, but leaves with the persistence and durability of the leaves of the rose bush. This variety cannot be propagated by seed, for it bears none, but has been increased by the usual modes of budding, grafting, &c. The process in nature, in the production of this variety, is precisely the same as in this new variety of grass, and the extensive cultivation by tubes is similar to that of multiplying the plant by layers or by grafting.

The question, whether this variety of grass will, under any circumstances, be brought to produce fertile seeds, and thus restore to our coast the old and dreaded enemy, the Means Grass, is not positively settled in my mind; although my experience in all other varieties, is in favor of its continuing just as it is at present, infertile and without the long runners of the Means Grass. I have never known varieties to return without an intermixture; nor can I conceive how an infertile plant, propagated from the root, can produce fertile florets by any mode of transplanting. I have however, seen a single limb in the male *Ailantus* Tree producing female flowers, which, however, did not, as far as I could ascertain, bear

*All old subscribers of the *Cultivator* will remember that this is the grass spoken of by P. E. Duncan, Esq., of Greenville, S. C., at page 161, vol 11, of this journal.—Eps.

seeds. An Ailantus Tree of this transformed male variety which I saw in Charleston 49 years ago, and was the only tree of the species for 20 years afterwards in the city, threw out many shoots, which were transplanted. They all proved male trees, like the parent. Under any circumstances, should a straggling shoot produce fertile seed, contrary to expectation, the plant that has it may be easily removed. I am so far satisfied that this plant will retain its peculiarities and not return to the Means Grass, that I have concluded, through the kindness of my friend, Mr. Peters, to cultivate a bed in my garden with it.

It is not my intention to trouble you or your readers with any account of the product of this grass, or its mode of culture. This, has, as I am informed, been done in your journal by various correspondents. The small field I saw planted at Mr. Peters' could not be exceeded in luxuriance. My experience, however, in regard to all grasses is in favor of good soils to produce a fine growth of any kind of grass.

As this variety has been very inaccurately named, and as it should be distinguished by some English name, which ought to be generally adopted, I would propose for it the name of *The Seedless panicled Millet*. I would further suggest that the Means Grass be called by its true name, *Panicled Millet (sorghum halapense)*. This will avoid much confusion. May I not farther suggest a hint that our cultivators, in future, do not inflict on the public any new names for true species—such as Rescue Grass, Musquet, Mysterious Grass, Texas Oat Grass, &c. Varieties they are fully entitled to name, but the designation of species, to avoid confusion, should be left to the Botanist, whose examinations will enable him to find that, in almost every case, the plant has been named already, and that, therefore, a new name would only create perplexity and confusion.

A thought has occurred to me while penning this communication. Our gardeners and cotton planters have let fall some rather rough expressions in reference to the so-called Means Grass and those who introduced it. They good naturedly, I trust, and in half a joke, threatened to lynch any man who would introduce it into their neighborhood. All this while, my good friends, Providence, who is better to us than our fears, was preparing the way to give you, through the medium of this doomed plant, one of the most valuable summer grasses, as you admit, that you have ever cultivated. The Wild Crab and Wild Pear which I have plucked from their native woods, are so acrid that they will screw up the mouth like a green persimmon. They, however, were organized to produce varieties, and are the parents of all those delicious varieties of Pears and Apples, which were recently exhibited at your Fair at Atlanta. So in regard to the Potato, the Car-

rot, the Cauliflower and all the other cultivated plants. So, also, in domesticated animals and poultry, as the Merino Sheep, Cashmere and Angora Goats, Woburn and Suffolk Pig, Bremen Geese, Aylesbury Duck, the Shanghai Fowl, &c., whose wild originals still existing, abundantly testify. God is the creator of species, and he requires of his intelligent creatures that they cultivate and improve them, that they may minister to their support, their comfort and happiness.

Inasmuch as I am inclined to believe that we at the South are, or soon will be, in possession of a sufficient number of summer grasses to furnish us with an abundance of pasturage and hay, a very important desideratum is to find one or more species adapted to winter pasturage. I intended when I commenced this letter to have furnished you with a few notes on the winter grasses that are now or may be cultivated with a prospect of success. But, as I have already swelled this letter to an unexpected size, I will only give a list of them, with the true scientific and English names of those which it is important for the farmer to know, at the same time pointing out the erroneous and unnecessary names, which only create confusion. The climate and soil of our Southern States is in the higher and mountainous parts of the country assimilated to that of the Northern States, and is favorable to the culture of wheat, &c., and will in time become a grazing country; whilst our lower country, which is best adapted to cotton and rice, present a different soil and climate: hence some of the grass, such as Clover, Timothy, &c., are less adapted to the sandy soil and warmer climate of the seaboard. The following are the Winter grasses which at present occur to me. Having, however, no immediate access to Botanical books, I am obliged to draw on a fading memory to aid me in the recollection of their true names and cannot speak with a certainty of perfect accuracy:

English.	Classical.	Names that should be omitted.
1. Barley, Rye, Oats, wheat.		
2. Lucerne.	<i>Medicago Sativa</i>	French Clover.
3. Spotted Medick.	<i>Medicago Maculata</i>	Yellow Clover.
4. Chilian Lucerne.	<i>Medicago</i> — ?	Alfalfa.
5. Swiss Lucerne.	<i>Medicago Falcata</i>	Yellow Clover.
6. Common red Clover.	<i>Trifolium Pratense</i> .	
7. White Clover.	<i>Trifolium Ripens</i> .	
8. Orch'd grass. Cocksfoot Grass.	<i>Dactylic Glomerrata</i> .	

Short Awned		
Horn grass.	<i>Ceratochloa breviaristata</i>	Res. grass.
1. Wild Rye.	<i>Elymus Virginicus.</i>	
Lime grass.		
2. Italian Rye	<i>Lolium Palicum.</i>	
Grass.		
3. Com. Rye	<i>Lolium Pereure.</i>	
Grass.		
4. Meadow		
soft grass.	<i>Holcus Lónacus.</i>	Musqueet Grass.
5. Lewis grass.	<i>Stipa Sparta.</i>	" "
6. Meadow oat		
like Grass.	<i>Tisetum palustri</i>	
	Torry. <i>Avena pa-</i>	
	<i>ustris, Micheur</i>	
	<i>Airapdens, El-</i>	
	<i>liott.</i>	
7. Hard grass.	<i>Rotbolia demioiata.</i>	
8. American		
Canary grass	<i>Phalaris Americana.</i>	
9. Com. Oat-		
like grass.	<i>Arrhenathrum avan-</i>	Texas Oat
	<i>accum.</i>	grass, Tallow
		grass, Myster-
		ious grass,
		Musquetgrass

Several of my friends near Charleston, as well as myself, are now cultivating the Short Horn Grass, the common Oat Grass, the Lewis Grass and some others, to test their adaptation to our soil and their productiveness. The notes I have made on the Winter Grasses adapted to our Southern climate will perhaps be worth publishing, when the result of these experiments are ascertained; at present they afford nothing of much value. I will just observe in regard to the kinds noticed under the head of No. 1. They were productive in the order above stated—the Barley furnishing the greatest product of green food. 2. The Lucernes have succeeded better with us than the Clover. 4. The Chillian Lucerne, if I could judge from a single gigantic specimen in my garden, will probably be found to be so marked a variety that I would recommend its culture, since I regard it as having become naturalized to a climate somewhat similar to our own. 9. Some gentlemen have written to me to inquire whether the Short Awned Horn Grass was the same species as that called the Tall Oat Grass of Texas. They are very distinct and widely separated species. 13. The Meadow Soft Grass, notwithstanding it succeeded in few places in the South, generally dies out about the second season—unless it is planted in the garden and the roots separated in spring, by which I have sometimes preserved it for several years. Melclair says: "Cattle prefer almost any other grass to this; it is seen in pastures with full grown, perfoliate leaves, while the grasses that surround it are clipped to the roots. Its nutritive matter consists entirely of mucilage and sugar, while the nutritive matters of grasses most liked by cattle are either acid or saline"—(Fort. Gram. 161. No. 14.)

Lewis Grass (*Stipa Sparta.*) This species has, in some way, been lost sight of by those who have written to me on the subject of grasses. The specimens they sent to me supposing that they were Lewis Grass were all of one species, viz: The Common Oat-like Grass. The specimens, however, given to me by Mr. Cloud at Columbia, S. C., at the meeting of the Society and Legislature in the autumn of 1853, were not the Oat Grass. I have, at this moment, lying before me the very bundle of this grass with Mr. Cloud's name attached. This is the species I have referred to, *Stipa Sparta.* Its history is as follows:—The *Stipa Juncea* is a native grass of Europe. Muhlenburg describes it as inhabiting Canada, (p. 182.) It is given in Eaton (p. 57.) Nuttall, in his travels in Missouri, found what he supposed to be this plant, and thus describes it:—"The *Stipa Juncea* of Europe (as described by Linnaeus) with the awns nearly straight and without pubescence." The African variety figured by Desfontains, has twisted pubescent awns, and blunt seeds; the Missouri plant has a nerved, chaffy, loose calyx filiformly acuminate to more than double the length of the seed, which last is acutely stipitate, almost one third of its length, the stipe pubescent, the seed rather obtuse, distinctly articulated to the awn which is smooth and slender, scarcely contorted and nearly half a foot in length. This species grows very commonly on the grassy plains of Missouri." A specimen of this grass was found in herbarium of our famed pioneer traveller, Lewis. Believing that it was not the European species, I sent to Professor Gray, of Boston, one of the very specimens kindly presented to me by Mr. Cloud, at the same time stating that I propose calling it *S. Lewisii*, Lewis' Grass, after the first discoverer. He agreed with me about its being the Missouri plant described by Nuttall, and also that it was the same species as that found in Lewis' herbarium, but informed me that it had already been described by Trinius under the name of *Stipa Sparta.* I have found the Latin description in "Kunth's Enumeratio Plantarum Tom. 1, p. 179." He draws the following distinction between the European and American species:—"The American species has the glumes twice as long as the perianth. The European, (viz: *Juncea*) has the glumes longer than the perianth by a third. The awns of the American is more than three times as long as the glumes while the European has the awns six times as long as the glumes." I must here add, however, that Professor Gray has some doubts whether the European and American species may not yet be found identical.

The difference between this species and the Oat-like Grass can be detected at a glance by the very long awns of the Lewis' Grass, which are fully five times the length of the Oat-like Grass. Indeed,

they belong to different genera. No. 16 is an admirable pasture grass, relished by cattle above all other grasses. It succeeds admirably at Mr. O'Hear's cattle farm, and on our whole seaboard. It is, however, a short grass, only fit for grazing, and is said not to flourish beyond the atmosphere of the ocean.—No. 17. This species has for many years existed on the plantation of Mr. Mathews, on James' Island.—He represented it as green in winter and an excellent winter and spring grass. Elliott says: (vol. 1, p. 102) "This plant appears to be worth cultivating as a spring grass. I have seen it on James' Island in a dry soil." No. 18. *Arrhenatherum Avenaceum*—Beam's Common Oat-like Grass—(Lindley's System, p. 305.) *Holcus Avenaceus*, Scop—(English Botany, t. 812. *Avena elatior*, Linn. *Avena elatior*—(Muhlenburg's Catalogue, Dr. Eaton's Botany, p. 48.)—*Arrhenatherum avenaceus*—(Hooker's British Flora, p. 39, Dr. Gray's Botany of the Northern States.)—This is one of the species cultivated by Mr. Stanford, Mr. Cloud, Mr. Peters and others, and highly recommended. By some Botanists it has been supposed to be a species differing from the European. I have compared specimens, with those from Pennsylvania—those found in an uncultivated state on the borders of the Santee, and also those sent to me by Mr. Stanford, and can find no characters by which they differ. One Botanist, I am informed, has expressed an opinion, that, although of the same species, it may have originated in America, from the fact of its wide diffusion. To this may be remarked that we have no evidence that the same species has in any instance been created in two widely separated localities. The fact that this species is only naturalized in a few localities in the Atlantic States and the rapid manner in which seeds are spread, will easily account for its general extension, and leads to the conclusion that it was brought to this country among other seeds. It was, therefore, a rare species in Pennsylvania in the time of Muhlenburg, and is expressly given as cultivated—(p. 183.) I regard it, therefore, as the European species transplanted at an early period into America, having become naturalized, and flourishing most in soils best adapted to its growth, more especially in the far West.

I regard Nos. 9, 14, 17, and 18 as winter grasses that are deserving of the careful cultivation and the patient experiments of the Agriculturist. In conclusion, I cannot but express the hope that it may not be regarded as too presumptuous if a gentle hint should be given to planters not to condemn hastily, any grass if it has not succeeded on the first trial. Soils and culture differ. The man who, with a poor, badly cultivated soil, should pronounce the cultivation of Corn a humbug, because he has only succeeded in making 3 bushels to the acre, might be

regarded as having pronounced a hasty decision.

Yours truly, JOHN BACHMAN.
Waukesha, Whitfield Co., Ga., Sept. 14, 1855.

Charleston, S. C., Oct. 3, 1855.

EDITORS SOUTHERN CULTIVATOR: Having arrived at home and received the proof sheets of the above I have had leisure as well as an opportunity of consulting authorities, and comparing specimens, I believe my designation of the species as given above which was nearly all I intended in the article, will be found correct.

If I have not already trespassed too much I will yet crave your indulgence whilst I make a few suggestions that may be of some benefit to farmers more especially those who are desirous of cultivating the grasses for pasturage and hay, and of renovating their soils by a rotation of crops.

1. *Preserve specimens of the various grasses*, in order that you may, at all times, know what you are cultivating, and that you may be saved from imposition or other disappointments. For this purpose prepare a volume of folio size, with alternate leaves of so spongy and common writing paper. On the spongy paper, on the right, attach your specimens of grasses. On the top border, the breadth of the paper, paste a strip of writing paper an inch broad, in which the name of the genus should be written. To each specimen having been pressed for a week between several folds of spongy paper and changed once twice into dry paper, must now, in its dried state, carefully fasten on the right page of your book—strip of paper with the name of the species attached fastens the stem of the plant to the paper near the bottom. On the opposite, or left side, contain the writing paper, you make your notes on the species—your experiments in cultivating it, &c. The book must be paged. An alphabetical index of each genus directs to the page where the specimen came, at a moment, be referred to. I have seen in England, Germany and France small volumes in which the various grasses were pasted on one side of the page and on the other, printed descriptions and directions in the language of the several countries, giving the names, qualities and mode of cultivation. A volume of this kind, like that of Ravenell on the Muscivora, would be invaluable in our country.

2. *Let the South raise her own Grass Seeds*.—This will save them not only expenses, but secure them against many impositions and disappointments. The seeds when old, have lost their vegetable power. There is in raising our own grass seeds another advantage which appears to have been, in a great measure, overlooked. You will, in this case, by successive sowing of Southern grass seeds, produce varieties of grasses springing out of European or Northern

species, adapted to your own soil and climate. Pomologists of Carolina, Georgia and Alabama the two brothers Summer, Van Buren, Dr. Baldwin, and many others, are now successfully adopting the method I recommended in several anonymous horticultural communications, fifteen years ago, (see *Southern Agriculturist*) although they may neither have seen or heard of my articles. They have proceeded and are now propagating many varieties of peaches, Pears and Apples from seeds. When superior choice varieties appear, they multiply them by the usual modes of grafting, budding, &c., and now are beginning to reap the fruit of their scientific labors, in being regaled by these choice varieties of fruit in succession, from June until winter. All domesticated animals and poultry, from man down to the horse, the cow, the sheep, the goat, the rabbit, the common fowl, and the pigeon; and all cultivated plants, from the apple, orange, wheat, rice, cotton, &c., to our grapes, produce varieties adapted to certain soils and climates. Varieties spring up in the South as well as in the North. Burden's fluted cotton, Ward's large rice, and many varieties of southern corn were not imported from California, the East Indies, or from some unknown locality at the ends of the earth—they were produced at home. I have a catalogue before me of the varieties of wheat advertised by the Agricultural Society of Scotland, amounting to 116—of potatoes 146 varieties, &c.; this may be added the many varieties produced in America—all these were raised from seeds. Among the grasses an immense number of varieties has already been produced. In the Common Red Clover, (*Trifolium pratense*) twenty distinct varieties are noticed in Lawson's Agricultural Manual, some being perennial and others biennial, some fibrous, others stoloniferous rooted, each having originated in some particular soil or climate of Europe where it succeeds better than any other variety. In the Rye grass (*Poa perenne*) twelve varieties are advertised for sale. The same changes have taken place in other species subjected to change of climate and culture. We produced our own grass seeds, made selections of the finest varieties and saved these separately, we might expect the same results that have attended the production of varieties of cotton, corn, rice, the clovers and the grasses in general. New varieties adapted to our climate would be produced, which we can never expect whilst we import our seeds from the North or from Europe. These views are strengthened from a well known fact. The farmers on Charleston Neck were formerly in the habit of sowing the seeds of Northern Rye for the purpose of obtaining very green food for market. The product was very inferior. But after successive planting of the seed produced in the South the product had been more

than doubled, and now Northern Rye seeds are no longer imported. I believe that a farm for raising of grass seeds might easily be connected with a Nursery, and would be equally productive. In all our chief Southern cities, such as Charleston, Savannah, Mobile, Augusta, Columbia, &c., we should have seed stores where planters could be furnished with warranted fresh grass seeds of the various cultivated varieties, raised in our Southern States.

3. *Prepare your ground for the reception of your Grass Seeds.*—I have never found a luxuriant crop of grass of any kind without a good soil. Analyze your soils and see what kind of nutriment they require. You can scarcely go wrong in applying lime or marl on the soils either of Georgia or Carolina. Gypsum has a powerful effect in pushing forward clover and other grass. A plaster mill is a simple and by no means a costly structure, and one at least should exist in every district or county. It may easily be attached to a grist or saw mill, and if we cannot find the material nearer home, it may be obtained in the rock from Nova Scotia or New York.

4. *Be not misled by the erroneous notion that foreign Grasses will not succeed as well in our country as in their native soils and climates.*—Providence gave to man at his creation a limited number of animals, birds and plants for his support. All of these have accompanied him in his migrations over the earth—all of them have produced varieties adapting them to every soil and climate. Since the early ages of antiquity, a very limited number have only been added to our domesticated species of animals and poultry.—The Lama, of the Andes; the Turkey, the Guinea Hen, the East India Goose and the Muscovy Duck comprise nearly all the additions that have been made during the last 3,000 years. In grains and vegetables, the Maize, the Potato, and a few less important species, have since been added. In the grasses, we have not made many additions from the native grasses of America. The most productive species came from abroad. Our Clovers, Blue Grass, Timothy, Fox Tail, Red Top, Fescue, Orchard, Crab, Crowfoot, and, indeed, nearly all our most valuable cultivated grasses were brought to America by our forefathers. These have become acclimated, and some of them, like the Clover, Timothy, Kentucky Blue Grass, Crab, Crowfoot, &c., are more prolific in many parts of America than in any portion of the Old World. As an evidence that Providence intended most of the cultivated grasses to be cosmopolites, we find them spreading over every continent where they have been introduced by a few scattered seeds. The winds, the waves, the birds and quadrupeds all lend their aid in carrying on the work of distribution. Thus, our Timothy is already found growing wild in the valleys of the Rocky Mountains, and the

Tall Oat Grass, Lewis' Grass, and the Meadow Soft Grass (*Holcus Lanatus*) exist on all the Prairies of the West, whilst a number of species have strayed into California and Texas. Birds, in their annual migrations from northeast to southwest, fly from 40 to 60 miles per hour. In several families, the Thrushes in particular, all the larger seeds of berries, &c., remain undigested in their craws, do not pass through their bodies, but are subsequently ejected by the mouth. In the Wild Pigeons and birds that swallow the seeds without cracking them, I have ascertained that digestion goes on very slowly whilst they are toiling under the fatigues of migration. When they alight and find better food, they eject the nudigested seeds from the mouth. The Buffalo wanders annually from Mexico to the far North, in Canada, to the distance of 1500 miles.—His four stomachs are not sufficient to enable him to digest all the seeds he swallows, but on the contrary, to prepare them for vegetation. I have observed that along the sides of our public highways, leading from Kentucky to Baltimore, the Blue Grass has sprung up—the seeds have evidently been scattered there by the droves of cattle annually driven from Kentucky to the eastern markets. By this natural process, the seeds of the grasses of the West may, in ten years, be sown broadcast over all our Western country up to the steepes of the Rocky Mountains. The time was when the Buffalo also ranged over Carolina, Georgia and Virginia. Thus, the wide distribution of grass seeds can be easily accounted for, and their adaptedness to our soils is proved by their wide diffusion and easy naturalization.

5. *Do not undervalue a species of grass because it is nearly connected with a family of worthless grasses.*—Of the Arrhenatherum avenaceum, common Oat-like grass, Hooker says: "I am not aware that more than one species exists of this genus;" yet it is closely allied to the genus avena, which, although it possesses the valuable common Oat, yet contains a dozen other species found at the Cape of Good Hope, in Barbary, and one species in South America, none of which are of any value to the Agriculturist. The Short Awned Horn Grass, *ceratophloa*, is, in its genus, not far removed from the common Cheat or Chess, which is regarded as a nuisance, but another species belonging to the genus of the Chess (*Bromus pratensis*) has recently been brought into favor in England as a valuable grass. Our Clovers belong to a genus of 80 species, and yet but two true species, the red and white, with their varieties have been brought into cultivation. Of the twelve native species in America, I know not one that I could recommend for cultivation. The Lucerne is an invaluable grass, yet it belongs to a genus of 40 species,

all of which are natives of Europe and not one in America; three species only are cultivated, and on only with perfect success, the remainder are exterminated as weeds. The Irish Potato has proved a blessing to the world, yet it belongs to a genus (*solanum*) of 140 species, which, whilst it has also given us the Tomato, is of the family of the Nightshade, which contains many poisonous species.—Each species should, therefore, be judged on its individual merits, without any reference to the characteristics of other species in the same genus or family.

6. *Adopt the Classical and English names for your grass, as they have been given by the concurrence of the best recent Botanists.* I will not detain you by offering reasons why many of these plants are arranged under new genera. Let it suffice to say, that when Linnaeus undertook the arrangement of the Animal and Vegetable Kingdoms on the principle of science, the number of known species was comparatively small. When the species became more numerous, characters were found, by which the genera could be conveniently subdivided. Neither the *Ceratophloa*, or *Arrhenatherum* have all the characteristics which belong to the old genera under which they were formerly arranged. It is, therefore, not always the pride of science, but the necessities of the case that prompt Naturalists to form new genera. Let the individual who produces, by cultivation, a new variety from known species, name the variety as he sees fit—he is entitled to select a name for his own child—but let it be given as a variety, and let the classical and English names remain. This will prevent a confusion in our nomenclature, and this will save us from the trouble and mortification of sending for the same species under half a dozen different names.

7. *Be not unmindful of the advantages which Science affords to the Agriculturist.*—It is frequently charged against Agricultural Science that "Book farmers are of no account." To many unsuccessful planters this may, with truth, apply, but it must, at the same time, be remarked that they have not combined practical application with scientific knowledge. England is now the most productive Agricultural country in the world, and yet its whole system of Agriculture is conducted on the principles of science. The plantation of Gov. Hammond is among the few, I have ever seen in the Southern States, that is, in every department, conducted on scientific principles and is also one of the most productive. His corn field of two thousand acres will favorably compete with anything of the kind in the world, and afford a standing evidence of the truth, that the proper application of science in all its details is capable of literally converting a once impassable morass into an abun-

dantly fruitful field. I was accidentally prevented from visiting the farm of Mr. Peters, near Calhoun, in Georgia, but was informed that it was conducted on the same principles, and with the same gratifying results.

8. In conclusion, allow me yet to remind you of the vast importance of the grass culture to the prosperity and political importance of our Southern States. You can easily produce on your own farms, the cattle that are to supply us with food—beef, veal, butter, and milk, and the sheep that are to furnish us with mutton and wool. All this while, however, we are dependent on Kentucky and Ohio for our beef and pork. The hides of our cattle are sent to New England and to be returned to us in Yankee pegged shoes. In passing, recently, through Carolina and Georgia, I observed abundant crops of Crab and Crowfoot Grasses. The hay that could be made in these two States, from these grasses alone, would feed all the cattle in the Union; yet, on my return to the city, I have, this day, been compelled to purchase hay shipped from Connecticut, and of inferior quality, and paid \$1,75 per hundred scanty pounds weight. I was informed that one cause of these high prices was the fact that the stock was reduced in consequence of so much of their hay being sent to Columbia, Camden, Aiken and Augusta!!! Our butter, (not over fresh) Goshen butter it is called, (Goshen must have grown rapidly from a township to an Empire State, since it furnishes an incredibly supply) comes, also, from the North, where their summer pastures are no better than ours might be rendered, and where they have no winter pastures, but are compelled to house their cattle through a long and dreary winter. These farmers, however, convert their grass into hay at the proper season, whilst our grasses are, in too many instances, left standing to ripen, to wither and become tasteless, like broom straw. On some plantations, that shall be nameless, you may, late in October, witness an ancient mode of mowing going on between the corn beds. A hoe is first sharpened, (I have seen this done with a brick) and the withered grass is mowed by this primitive scythe. A considerable portion of the roots, with much sand and gravel attached, is brought up by each cut of the hoe; the materials thus detached from Mother Earth are finally raked up and called hay. No chemical analysis, that I am aware of, has been made, in order to decide on its nutritive properties. In the winter our cattle, for want of hay, which we might have had for the cutting, are left to luxuriate on dry broom sedge, which possesses fattening prop-

erties about equal to that of dry pine leaves. Towards spring the cattle, thus pampered, become thin, weak and tottering, and may be classed among "Pharoah's lean kine." Some ditch or morass where they had strayed to find a mouthful of fresh grass as a change of food, (as the epicure wearies of turtle steak and plum pudding) becomes their last resting place. The Turkey Buzzards will direct you where to find their bones.

In the preservation of our sheep we are even less fortunate. The worthless curs of squatters and petted negroes kill them, and our independent Legislators, fearful that a law to chain or hang the curs, might endanger their popularity and lessen their votes, seem to have concluded to spare the dog and surrender to his tender mercies all that was once so confidently anticipated of the wealth and comfort that was to flow into our Southern States from fine wool and delicious mutton and lamb. The sheep culture being abandoned, our last resort must be to the Goat; and if the Angoras and Cashmeres fail, (which I think they will not) or the dogs begin to relish kid, when deprived of lamb, all our woolly prospects will have faded into thin air. All this while we have the finest climate in the world, and suitable pastures for sheep. How easily, could this stain on our Agricultural escutcheon be removed. J. B.

DIVISION OF THE FARM AND CLOVER CULTURE.

A subscriber at Pomoukey, Charles County, takes us to task with a good deal of severity for delinquency in passing over a matter which he thinks, and justly we admit, of much importance; viz: the proper division of the farm. He concludes his letter with the hope that he "has not trespassed on our time, patience or temper." Our time and patience are very much at the service of our readers, and as our friends seems to have calculated largely upon our *temper*, we take the compliment, and are rather pleased at his good opinion of our amiability. I reply to our correspondent at *Summit Point*, N. C., we asked that some of our experienced correspondents would let us hear from them on this subject of the division of the farm, and in expectation of a response, postponed the matter. As we are thus far disappointed we will throw out some views of our own, hoping that the introduction of the subject will lead to something better.

The three field system which our friend says is practiced by himself and his neighbors, was denounced by Col. John Taylor in his *Arator* as "the

most execrable within the scope of the imagination." Yet this system takes a crop of corn or tobacco the first year, wheat or oats the second, and rests or lies out in grass from harvest of the second year, and throughout the third year—having very nearly two years of rest from the taking off of the second crop to the time of breaking again for corn or tobacco. The four field system with a fallow for wheat, which he proposes, takes a crop of corn or tobacco, and two crops of small grain in four years, and gives in that time about the same amount of rest—a large portion of this time, viz: all after the second crop, is devoted to a growth of *ray weed*, which, however, perishes upon the land. But for this weed which seems to leave nothing but dry sticks to be returned to the land, this system with its extra crop of fallow wheat, would be theoretically much more objectionable as regards the preservation of the soil than the three shift system. Yet we confess the most successful farming within our personal knowledge, both as to immediate results and the preservation of the soil, is done under this system. Our own knowledge of it is in Maryland, and we know that it is practiced with equal success in portions of Virginia. But the life of this system is *red clover*; and we do not know that it is practiced successfully where this most valuable improver is not relied upon, and where it does not flourish, and we suspect that the success of either rotation will depend mainly upon the careful culture of this plant. The four field system of Col. Taylor which he proposed as a substitute for that of three fields, left the third and fourth year entirely to grass.—The fault of this is that the clover passing away during the third year, the fourth year is occupied with weeds of various sorts and blue grass, the former exhausting the land and the latter a serious enemy of wheat and clover. The land becomes what is termed *foul*, and clover refuses to grow upon it. Nothing is better settled in practice than the necessity of active, cleansing cultivation, for the successful cultivation of clover. The term "clover sick," being applicable rather to land full of crude vegetable matter not capable of being appropriated, than by the frequent recurrence of the very destructible clover plant.

The five field system which makes a clover fallow the fourth year and leaves the fifth year for rest, has the objection to it, that the fifth year must be given up to the natural growth of weeds; clover if sown, rarely succeeding upon fallow.

The point to be aimed at, is the largest amount of crop, with the least amount of injury to the

land. To effect the least injury, or the most good to the land, the interval between the exhausting crops should be as far as possible occupied with such plants as are ameliorating themselves, and do not induce subsequent evils. The growth of weeds with their decay upon the surface may be ameliorating, but they leave their seeds, which may be ruinous to future crops, and are nurseries of insects. A blue grass turf is ameliorating in some respects, binding the soil to preserve it from washing, and affording a good bottom for the coming crop of corn, but blue grass as well as weeds, is the enemy of the great ameliorator, clover. While clover is the *sine qua non*, it is of itself *everything*. It perfectly, entirely supplies all the needs of the most valuable plants at the very least cost. Nothing, therefore, which is inimical to it should be allowed in your system. Let the great aim be to grow clover. That will grow everything else. But not only has clover this value, but we believe that the system which grows the greatest amount of crops is the most favorable to its growth. That system, as we have said, which requires such quick succession of profitable crops as gives the clover when sown a well cleansed bed on which to grow. We have often seen this plant, even on worn out lands succeed much better after two successive crops of corn, than on the same lands after a single cleansing crop.

Acting upon these suggestions, we will say to our correspondent, that he may find the four field system he proposes, sowing wheat upon clover fallow and wheat or oats after corn, a suitable one. It is a system productive of crops. It is favorable to the growth of clover, because it affords no time for the accumulation of crude and indigestible vegetable matters in the soil. The clover itself and the *ray weed*, while they afford large returns of vegetable matter to the soil, are at the same time very destructible, readily decomposed, and available at once as food for the large crops grown.

For this system, and indeed for any system, a standing pasture, or extra-pasture ground is essential. In nothing do we see more mismanagement than on this point of grazing our arable lands.—Overstocking upon such lands, is the curse of any system. We profess to be cotton or tobacco planters, or corn and wheat growers, but we expect the same lands that we devote to these purposes to grow beef and mutton and wool and pork besides. We can't resist the temptation to "turn out" calves and lambs without number, until our stock accumulates on our hands, and we fail in both

grain and stock in the vain attempt to produce both, upon ground sufficient only for one or the other, and we ruin the land by the same operation. If planting or grain growing is your business, keep your stock of horses, cattle, hogs, &c., at the least number, consistent with the proper conduct of your farm operations. If your circumstances of location, &c., make it desirable to raise or fatten stock for market, lessen your crops of grain and increase your grass, by having smaller and more fields and longer rotations, or by separating a portion of your land for grazing purposes. But in all cases make such provision for your stock, as will afford the fullest protection to your young clover. It should be grazed not at all or very lightly during the first season, and not at all the second year until it comes into full bloom. Then it may be advantageously grazed until the crop is pretty well trampled—it is desirable to have it lie upon the ground. But the clover field should not be relied on as the pasture field of the farm stock.

We have a strong conviction, that a proper attention to stock raising, as one means of diversifying our farm productions, should enter more largely into the system of the region now mainly devoted to planting and grain growing. In doing so our grain fields though reduced in size, would very soon, under judicious management, yield as much grain with less labor, and we should have the additional profit of the stock. Under such a change of system longer rotations would be necessary, yielding more grass for hay and pasture. With five fields, where clover alone is now sown, we should sow clover and timothy. The system might be the same with the common four field system with clover fallow, except that the fallow might be postponed one year, giving a full season to the clover and timothy, and the next year to the timothy alone, should the clover "run out," and making a fallow of the timothy sod for wheat.—We are not advised that there is anything in the timothy sod unfriendly to the growth of wheat, and have adopted in our practice this rotation. When more than five fields are desired, we should follow the system of four fields with clover fallow as far as the fallow, and then sow timothy and orchard grass with the fallow wheat, and leave these in possession as long as may be thought desirable.—We thus under any change preserve the fallow for the important crop of wheat.

As to the time, &c., of sowing clover seed, (in reply to our correspondent,) we think it best on the whole, on any ordinary wheat lands to sow it with wheat following corn. Where the land is

already strong enough, or can be made so, with concentrated fertilizers, wheat is a more profitable crop than oats, and much more favorable to the "setting" of young clover; nevertheless, if oats be the crop, we should not fail to sow clover seed. In land fit to grow clover, it will ordinarily succeed well with oats. When we intended to sow no grain, we should sow clover seed when the corn is "laid by," or early in September, if we could then run a spike tooth harrow over it. Being sown at this time, the clover comes into full bloom the following June, and of course the benefits of the crop are much earlier realized. As far as our experience and observation go, however, winter seeding is more successful when there is the same degree of preparation of the ground.

We earnestly desire to see the culture of clover prevail universally, but we have seen a great deal of costly seed thrown away upon lands incapable of producing it. It is a great mistake to suppose that it is worth while to sow it at all upon poor lands ordinarily, until we determine to be at the expense of fertilizing them sufficiently to produce a crop. If our advice could be taken, all expenditures for guano, bones, super-phosphate, &c., should be directed mainly to the growth of the clover crop, and on this foundation we should rely for future crops and permanent fertility.

American Farmer.

From the Pendleton S. C. Farmer and Planter.

COL. WILLIAMS' CASHMERE GOATS.

DEAR EDITOR AND READERS:—We are just home from a short trip into the edge of Laurens, to see what our neighbors over the way were striking at. We jotted down a few of our notions, as we have in our constitution some inklings of "*pro bono publico*," (which means public good.) By the way of introducing these things before you and the readers, in our own way, we will tell you what we saw and what we think of the things seen.

We paid a visit to our worthy friend, Col. John D. Williams, by whom we were hospitably received and kindly shown everything about the homestead and farm, stock, &c. We learned something by the survey of the various buildings that form an interesting and well arranged group—such as stables, cow-houses, cattle-shelters, and all the appurtenances of a farmer's home. A well cultivated kitchen garden on a scale that suited our notions of plentiful culinary supply, spread out its ample area on one side of the house. Around this we noticed the cuttings of the O-gee Orange

were thickly planted, and we were much surprised and delighted to see a majority of them showing life. This experiment, if successful, will be "glory enough" for any one man, and small as it may appear to the non-calculating mind, the success of this experiment may have vast modifying influences on the future of our country. The forest is fast melting away, and a fire may ere long be thought a luxury even in this not far back forest-land, and the want of timber for fences must be abandoned. We saw little of the field operations of the Colonel's farm, but fairly conclude there was harmony extended to all the business of the plantation and farms.

We will next introduce the reader to an experiment now being carried out by Col. Williams, in the way of Goats. Yes, reader, Goats! This, like all other innovations on the practices of our *daddies*, is looked upon with the slant eye of skepticism, by the non-progressive stand-still masses. But we say to such, what improvement of the inventive genius of man has been met in the same way, and better wait a bit before you pass judgment. The Colonel is one of the utilitarian, go-ahead, Saxon race, with a sort of oaken will that resists impressions from the sneers and remarks of the outsiders; thus constituted by nature, he is fitted to brave all petty annoyances that often check progress in minds differently constituted.—Now, reader, do you know that the drapery that covers the well formed bust of that lovely woman, was but yesterday the natural dress of a Goat.—Yes, the peelage of a despised goat, worked into that splendid shawl, that cost its beautiful wearer upwards of a thousand dollars!

It is to produce this wool, and constitute it a staple of our country, that Colonel Williams is now directing his care, and spending his time and some money; and we think should he be spared with health and strength, success will crown his efforts, and his name will be remembered as a benefactor of his fellow-man.

It is with pleasure we look upon all these onward movements, and from our observation, we are satisfied the experiment will fully meet the end for which it is now being carried on. We will now inform you, Mr. Editor and readers, of the present condition of the experiment. The Colonel has about fifty females of the common Goat, with several females resulting from the cross with the full blooded male Cashmere Goat. These are now bringing kids of three-fourth Cashmere blood. One of these kids we examined closely, it was about three weeks old; wool was fine, thick, and

about one inch and a quarter in length; the general appearance approached closely the Cashmere in every particular; the ears longer, broader and flopped down, as we call it, similarly to the Cashmere. Farther, this kid had receded from the common Goat, its grandmother, and in every way resembled the Cashmere type. This is the main point in the experiment. The entire disappearance of the common Goat, and the permanent establishment of the Cashmere. The in and in plan is of necessity, from the fact of the experimenter having but one male of the full Cashmere. Had the Colonel other males, we should feel well satisfied of the result; but with all this we are sanguine of success. If Dr. Bachman is right where he claims a common origin for the Cashmere and the common Goat, that "one is but a variety of the other" by the intervention of man and other external agencies, the thing is entirely possible and even more than probable. If the Goats are varieties, and not specifically different, there certainly appears to us no difficulty in the matter. Should they be specifically different, we know too little yet of the economy of animal life, to pronounce with any certainty. Observation and patient experiment is the only certain test of these things, and this praiseworthy work is what our friend is at, and we heartily wish him success. What we are pleased to call domestic animals are much talked about, but very little understood. All is in the deep obscurity of the remote past as to their origin. We know that animals and plants have been vastly modified as regards size and color; but this we think sums up man's influences over nature's work. In this great experiment, there is one prominent promise of success under the laws of nature, which is, that the weak are always lost under the influences of the strong. The Cashmere Goat, is physically a much stronger animal than the common Goat, and we may expect this law to operate as well in this as in all other of animal being. This law we think will aid the Colonel in his experiment.

We next took a look at the Col's. improved cattle of the Durham breed. We need say but little about them, as your readers are acquainted with them better than we are; to our judgment they are fine, and the difference so perceptible that we felt ashamed of our own scrub-stock. The Colonel with liberality that was unmerited and unexpected on our part, presented us with a fine bull calf, for which we would thus express our thanks. It awakened in us a new feeling about this kind of stock, which is everywhere neglected over the

broad area of the cotton-planting States. To do better, is "better late than never," and we shall make a beginning at improvement. The much neglected docile cow is one of the greatest blessings bestowed on poor, ungrateful man, and in the neglect of caring for them, we evince to the Donor a want of thankfulness for his gifts.

We saw a part of the Colonel's flock of sheep; mostly we believe of the French Merino variety. They were in fine order, particularly for the cold dry season we are yet passing through. Their wool has just been taken off; one fleece from a year old buck, weighed eleven pounds; one from a ewe with her first lamb, weighed eight pounds. The Colonel told us one of his ewes yielded a fleece of ten and a half pounds. Say, readers, if too great a plea for these innocent and important animals is asked in a dog-law? We think not.—We saw also a couple of Suffolk hogs. We can't say much about them. They were pretty, and we think will do finely for a pet operation; but of this we know nothing; we can't condemn anything without a good reason. We dislike all protests that can be backed by no stronger reason than that very ready and unmeaning, "it won't do because it won't do." So we shall pass over the Suffolks, and leave them to work their way on their own merits.

From what we have seen of Laurens District, we are disposed to think that her farmers are beginning to feel the necessity of a reform in their business. We think some influence is at work, that will tell of better things. A few such men as the Williams, Davis, &c., will leave the "foot-prints" of their doings as foci of improvement.—Abbeville must arouse to the work if she would save herself from a laggard position. Laurens has an Agricultural Society, of what strength we know not; but from the report of some of their committees, they are awake to their duty, and the wants of the farmers as to the system of education suitable for their sons. There is one thing certain, before a man can do anything well, he must know how to do it. Knowledge is not born with us; it must result from immediate application of the powers of the mind, or be communicated to us by oral or written signs of ideas. Isolated efforts like that of our friend, will do much. He is rendering a great public service, and deserves the notice of his fellow countrymen.

Wisely and patiently conducted experiments are the surest to remove prejudice and test the value of every earthly interest. Our people as yet appear to be averse to any co-operative efforts for the

improvement of agriculture and its adjuncts, and individual effort is left to struggle for the elevation of the major pursuits of life. The few men who are engaged in these experiments, are often made the butt of the thoughtless, and their motives ascribed to the love of money, or a display of a low and paltry vanity. Excuse the length of this article as we think it of some importance.

ABBEVILLE.

CHINQUEPIN RIDGE, May 12, 1855.

CASHMERE GOATS.

R. PETERS, Esq., of Atlanta, in a private letter, thus alludes to the hardiness and frugality of this valuable stock:

"I am better pleased every day with my Cashmere Goats. They are now living and growing fat on the seed of 'rag weed'—a plant which no other animal will eat:

We are also indebted to Mr. Peters for several samples of wool from some of his half-blood kids (raised from the common Goat and a Cashmere Buck.) These samples, which may be seen at our office, are really of astonishing fineness and length of fibre; and when we consider the undoubted value of this wool for manufacturing purposes—the hardy character of the Goat—its exemption from nearly all diseases—its dog-defying character—and its superiority in almost every respect over the sheep, so far as vigor and stamina are concerned—we are constrained to repeat, with increased confidence, our declaration of last month, that the Cashmere Goat is by far the most important and valuable addition that has been made to our domestic animals within the past century. In concurrence with this opinion, we are pleased to mention the name of that profound scholar and zealous naturalist, Rev. Dr. Bachman, of Charleston, whose allusion to their value will be found near the close of his very able article on Southern Grasses, in present number.

We also learn that Dr. Jas. B. Davis, of South Carolina, passed through this city recently, with fifteen three-quarter bred Cashmere ewe kids, 7 months old, and one pure bred 2 year old Cashmere Buck: having sold the lot (16) to a gentleman of Gallatin, Tenn., for the handsome sum of Four Thousand dollars—the kids rated at \$200 each, and the Buck at \$1000.

It will be observed that Mr. Peters offers a few half-blood Cashmere Bucks for sale. See advertising columns.

Southern Cultivator.

From the American Farmer.

SUPPLEMENT TO THE REPORT ON HUSSEY'S LOCOMOTIVE STEAM PLOWING ENGINE.

In submitting their report on this machine, the committee announced their intention to ascertain the result of the attempts which had been made in Europe to invent a locomotive steam plowing engine, for the purpose of settling the important question of *priority* in an invention which is destined to make an era in the agricultural history of the world.

The most important, and also the most recent trial of this description, took place on the 22d of July, in the present year, at the Carlisle meeting of the Royal Agricultural Society of England.

The following account is taken from the Gardener's Chronicle and Agricultural Gazette, published in London, on the 28th of July, 1855:

"On Tuesday, the grand point of interest was the trial of the Steam Cultivator. A great number of spectators were assembled in the heavy-land field, but unfortunately, no engine made its appearance, except Boydell's, which amused as well as astonished the company, by running backward and forward over grass, or plowed surface, along or across the lands.

* * * * * It was then tried against a force of men pulling against it, and it was found that 30 men could stop it; so that, professing to be 12 horse power, it may be considered as efficient for nearly half that amount, fully one half being used in its own conveyance over the ground, on which it was then working.—A frame containing four plows, mounted upon carriage wheels, and fitted with levers, for lowering and raising in and out of the ground, was attached to the engine in one of its trials. The engine proceeded slowly, dragging the plows behind. This arrangement of plows for the purpose, is the invention of Mr. Coleman, and answered pretty well until one of the plows broke short off, and the work came to a stand still. A common iron double furrow plow was next tried, but not with very marked perfection of plowing. The trial, in fact, being merely to see whether the engine could drag plows behind it, as well as propel itself over the land. Gibbon's digger was then drawn by the engine. * * * * *

The draught of this implement, we judged to be about that of six horses, but the engine of 14 horse power could proceed with it only at the pace of 2½ miles per hour; so that 8 horse power was absorbed in mov-

ing the engine itself. This fully shewed the usefulness of such a ponderous machine for tractive purposes.

* * * * * Great disappointment was felt at the non-appearance of Usher's Steam Plow.

* * * * * It has been tested to be of 19 horse power; but the weight seems much greater than 5½ tons, as six horses were hardly worked in drawing it into the Show Yard. Having got up steam, and attempting to propel itself to the field, the badness of the road occasioned a slight accident, and this, together with the unwillingness of the inventor to have the machine tried upon stiff lea ground in wet weather, has prevented the public from witnessing its performances.

As we were coming away from the field, impressed with the sentiment that the "steam cultivators were a failure," we received intelligence that another steam plow had started in a field half a mile off. Making the best of our way to the light land trial field, there sure enough stood a portable engine in one corner, with ropes and pulleys, and a plowing machine, all in action. The engine was that belonging to Mr. Lee, of Walsall, and the plow and tackle are the invention of Messrs. Fisher, of Stamfordham, manufactured by R. Roger, of Stockton-on-Trees. * * * * *

We were informed by the exhibitors, that a 4 horse engine is sufficiently powerful to work two plows, and that, with 4 cwt. of coal, it will plow four acres in a day, the expense of labor being only that of two men and a boy. If this be strictly the fact, we have a complete invention, able to plow light land, with a cost of say three shillings per acre.

* * * * * The Steam Cultivator entered for exhibition by Mr. Alexander Dunsce, has not appeared, but as far as mere plowing is concerned, we think the above contrivance contains all the elements of success."

The above is a literal copy, omitting only the descriptions of the engines and cultivators, which are gang plows. It proves conclusively, that no Locomotive Steam Plowing Engine has yet succeeded in England, where, in the language of the London paper, the "steam cultivators were a failure."

The last named machine, (the only one which seems to have been partially successful,) is a stationary engine, and not a locomotive. * We have

*At the World's Fair in Paris, during the present year, to which all nations sent their most wonderful inventions, no steam plow was exhibited.

has shown the correctness of the position taken in our report, that the honor of inventing the first successful "Locomotive Steam Plowing Engine," belongs to Obed Hussey, of Baltimore, Maryland, in the U. S. of America.

T. TILGHMAN,
C. B. CALVERT,
M. T. GOLDSBOROUGH, } Committee.

HORTICULTURE AND AGRICULTURE.

BY L. DURAND.

BETWIXT the terms Horticulture and Agriculture there is generally supposed to be a wide division of interest and meaning, and are invariably treated as separate sciences. This, in my opinion, is an egregious error. The two terms are so intimately connected together that it is difficult to tell where one begins and the other leaves off.—Many farmers seem to have an idea that Agriculture and Horticulture have no particular or special connection together. This idea is a great mistake on their part, for the two have a very special and close interest with each other. Agriculture proper means the improvement and cultivation of the soil, on the farm at large, in the various kinds of crops grown, worthy of cultivation. Horticulture may be called farming more refined; that is, garden culture, or the cultivation of all classes of vegetables, fruits, flowers, fruit trees, &c. So that the farmer should not only learn to be a good farmer or agriculturist, but he should also aspire to be a good horticulturist by practice. When the two are combined together with skill and practice, science, &c., the farmer then may stand at the head of his profession.

Few of us can or do have a just appreciation of what an improved agriculture and horticulture will have on the community at large in refinements and civilization. In fact, it is one of the motive powers of progress towards refining and civilizing man, in which all may partake and be benefitted. The improvement of the soil has a peculiar effect, or will have, on all who will engage in its cultivation in the right spirit, to soften down the rough nature of man, and make him a creature of patience, hope, and good works. True, this may not be the case when the business is simply followed as a means to get a living and make money. But when the mind and heart is engaged with the hand labor to carry forward this business, then it is that the cultivator becomes a real improver of himself and his race. For instance, whoever saw or heard of an improved agriculture or horticulture grow-

ing up and flourishing in a land of "Heathenism and Idolatry?" No one. What does this fact prove then? It says, in plain words, that where the cultivation of the soil is neglected, from generation to generation, that misrule, barbarism and heathenism will take the place of civilization and the arts. This fact can be abundantly proved by past ages, and, of course, the same rule and practice would again bring about the same results in time. Again the improvement of the soil brings with it all the various kinds of rural embellishments of the day, which go to make up the happiness of civilized society. In fact, it would be difficult to name any special improvements of the age which does not have its foundation from this source as a starting point. If these points are true, then should not all feel an interest in promoting these objects, which all are so intimately connected with? Then, as we have shown that not only farmers and gardeners are interested in this development of the resources of the soil, but the whole community at large are brought in debt to this source. Of course we expect that those directly interested in soil cultivation as a means of obtaining a living, will feel more interest in this subject, than those not directly in connection with it. But still there is a principle beyond the mere "dollar" idea and view of the subject which is worthy of attention and consideration. In this grasping age we know the first question is, how much "money" can we bring out of it as a business? Our question now is, what is this business worth to us as an improver of morals, health, happiness, long life, &c.? Let every individual answer this question for himself at leisure.—*N. Y. Horticultural Review.*

IMPORTATION OF COTSWOLD SHEEP.

COL. J. WARE, of Clarke Co. Va., whose public spirited efforts to improve the Sheep Husbandry of the country, have been eminently successful, has just received his annual importation of prize animals from the Show of the Royal Agricultural Society of England. We had an opportunity of seeing this splendid lot as they passed through our city to the residence of Col. W., and can thus speak of them from personal observation, as certainly unsurpassed, if equalled, by any previous importation.—*American Farmer.*

THE best rule of etiquette which we ever read, is this: "All things whatsoever ye would that men should do unto you, do ye even so unto them."

NEW METHOD OF PERPETUATING THE PLUM.

BY ISAAC REAGLES.

NURSERYMEN are generally very unsuccessful in propagating the plum on an extensive scale. The great difficulty consists in the buds refusing to take, with sufficient tenacity, to become a component of the stock. Sometimes in budding plums, a portion of the wood or bark will attach itself permanently to the stock; but this portion, in most cases, is not the part which contains the bud. As the season for budding the plum tree is quite short, the only remedy remaining for stock, on which the buds have failed, is to engraft the ensuing spring; but engrafting the plum is an equally unsuccessful operation, hence the difficulty that is experienced in getting a saleable stock of plum-trees.

Having devoted special attention to raising plum-trees, for the wholesale trade, for the last ten years, it became necessary for me to devise some method that would facilitate the increase of stock. I had often observed that the buds invariably grew better on wood of the current season's formation, than that of the previous year. Taking advantage of this fact, I subsequently sought the new wood, when practicable, in which to insert the buds; the only fault with this method was, that the trees were worked so high on the body of the stock, that in the case of rapid growing kinds, the scion outgrew the bottom, thus making unsightly and rather unsaleable trees.

I have practiced a method with great success for several years, by which I secure the principle of budding in new wood, and at the same time, work the stocks within an inch of the ground.

In the first place, care must be observed to procure none but sound, fresh seed. In the month of November, the ground must be prepared for the reception of the pits. This is performed by plowing a deep trench. (The soil should be a rather stiff loam, which may be afterwards deepened to eighteen inches with a spade. This trench must be partially filled with a compost made from exciting manures, and before using should be thoroughly decayed and frequently turned over in the heap, so as to be well incorporated. On this compost an inch or two of earth may be thrown, after which scatter the seed thinly, but let it compass the entire width of the trench. On the top of the seed, I throw coarse gray sand, such as is used in making mortar. Sand remains perfectly friable,

and does not oppose the shooting stem of the young plants, when vegetation takes place in the ensuing spring, and it also prevents for a time the growth of weeds, thereby permitting the seedlings to get the start of foul stuff, which, with a little attention, they will maintain throughout the season. The object of this peculiar cultivation, is to force the seedlings into an average growth of two feet the first summer, and by the first of August, they are all in fine budding condition, still growing rapidly; the bark springs from the knife, and affords ready admission to the bud, which if carefully inserted will not lose five per cent. I have a field of plum seedlings budded the past season, which will average two and a half feet in height, and scarcely a bud exhibits symptoms of decay. The subsequent culture is exceedingly simple. The budded trees are permitted to form their first seasons growth in the seed bed. Many of them will attain the altitude of six and seven feet. They are then transplanted into the nursery rows, where they may remain one or two years; all will, by the expiration of that time, be fit for sale. If it were not for adopting this plan, my trees would cost half a dollar each, to grow for market.

Union Gardens, Schenectady, N. Y.

N. Y. Horticultural Review.

A Georgia horticulturist writes us, that he has a new seedling strawberry, which he intends sending out the ensuing season, that will create considerable sensation among the consumers of strawberries, *au lait*. He says it is a cross between Burr's Phoenix and a native of Alabama.

"This new strawberry is of the hantboy order, immensely large, flesh very firm, and of more exquisite flavor than Burr's new pine, and with my culture is a continuous bearer. I believe it the finest strawberry ever produced. * * * The plant is hermaphrodite in its character, fruit stalks very tall and erect, with fruit stems from three to five inches in length, being highly ornamental as well as delicious. As soon as the fruit ripens I will send you some, per express, and although you may not get it in its freshness, you will be enabled to judge something of its quality."

In the letter containing the extract as above, we received a blossom of the plant. Although but a skeleton of what it had been, it abundantly verified the statement of extraordinary size, being much the largest strawberry blossom we have ever seen. We intend, at an early day, to give a representation of the berry and foliage, also an accurate description of the plant. We forbear doing so until we shall have realized our correspondent's promise of specimens, when we shall take pleasure in informing our readers of every particular.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., APRIL, 1856.

NOTICE.

Persons who have not paid for the first Volume of the "Arator" will please remember that the subscription year closed with the March number. And when they recollect that "*times are hard*," and that *provisions cannot* be obtained, without the *Almighty Dollar*, I have no doubt but that they will send in the *Cash* immediately.

EXECUTIVE COMMITTEE OF THE GRANVILLE COUNTY AGRICULTURAL SOCIETY.

Thomas J. Blacknall, Chairman, Col. William R. White, William M. Blackwell, N. E. Canady, Wiley Perry, John B. Hicks, Edward H. Lyon, John Bullock, Jeff. Horner, William E. Wyche, H. H. Burwell, Jas. Fuller, P. W. Wyche, John M. Bullock, John J. Speed, James B. Daniel, John C. Taylor, Littlebury Stone, Dr. John R. Hicks, S. S. Royster, T. L. Williams, Col. P. E. A. Jones, Hartwell Hargrove, S. S. Cooper, D. P. Paschall, Arch'd. Davis, William A. Harris, John S. Burwell, Dr. James A. Russell, John H. Webb, Dr. B. L. Cole, T. B. Lyon, Carter Waller, Allen C. Cozart, John Mann, Dr. James L. Wortham, William Clements, W. L. Allen, J. H. Daris, James B. Hobgood, A. W. Venable, H. K. Taylor, Thomas Miller, H. T. Watkins, R. P. Hughes, William A. Eaton, T. H. Rainey, A. R. Burwell, J. M. Paschall, Dr. A. C. Harris, and R. W. Gregory.

Five members including the Chairman, constitute a quorum for transacting business.

A. C. HARRIS, *Secretary*.

THE VINE AND THE WIND OF GEORGIA.—The Augusta Constitutionalist publishes a letter from the Hon. Mark A. Cooper, giving an account of a recent visit to the Vineyards of Dr. Anderson and others, of Wilkes. 'These vineyards,' he says, 'were planted from the slip, in the spring of 1853, and now produces grapes of the most admirable quality.'—Each vine has on an average of 45 clusters of the very largest size, the flavor surpasses anything I have known. The vineyard was an experiment of one-fourth of an acre, with a setting of 150 vines per quarter, or 1,000 to the acre. Owing to dry weather only 120 lived and are in bearing.

I am not premature in the conjecture that in ten years more the wines of Georgia will meet those of France and our Atlantic ports, and soon thereafter they will make good the completion by going to European markets; so that what has just been achieved by her flower mills and farmers, will also be effected by her vineyards and wine presses.

Why may not North Carolina rival Georgia?

HORIZONTAL DITCHING—SOUTHERN LAND MURDER.

EDITORS OF THE AMERICAN FARMER:—In traveling recently from Columbus, Mississippi, to Richmond, Va., through Alabama, Georgia, South and North Carolina, I was struck with the hill-side ditches which I observed on thousands of rolling plantations in Alabama and Georgia, to prevent the washing of their loose soils, and which was in fact, almost the only commendable feature which I observed in the *murderous* agriculture of the planting States. Just think, Messrs Editors, of immense tracts of fertile soil, exhausted and thrown out of cultivation, in many places washed into gullies, and covered with yellow broom sedge, beautifully variegated with the green foliage of upstart pines, before they are cleared of their original growth—the old dead trees standing yet quite thick upon the ground! What possible apology can these vandal land-murderers offer to posterity for the destruction of their rich inheritance, when, by good plowing, with two-mule plows, instead of scratching the surface with a one-mule scarifier; by horizontal ditching, to prevent the washing of undulating lands; by sowing rye and oat pastures for their stock; by always sowing their cornfields broadcast with the Southern Pea, at the last plowing; and by preparing their lands by pea-fallows, for their wheat crops, as recommended by that great farmer, E. Ruffin, in his Agricultural Essay, (which ought to be in the hands of every Southern farmer,) our planters might not only preserve their lands in fertility, but would, from the outset, fill their corn-cribs and smoke-houses, and cotton-pens, to bursting. This system will have to be adopted, sooner or later, on the Southern country—the cotton growing region, I mean—will be exhausted and depopulated.

I have a friend, a young planter in Mississippi, who is determined to preserve the fertility of his land by the means I have indicated, and still keep everything fat about him; raise his own stock and grain, and send to his commission merchant every year, at least five bales of cotton, to the hand. Some of his land is quite steep, and requires ditching to prevent it from washing. He will therefore be very much obliged to you, Messrs. Editors, or to any of your correspondents, who will be kind enough to

furnish him with full information upon the subject, stating how far apart the ditches ought to be made on moderately rolling land—how deep and wide—and the best mode of making them—with a plow and scraper, or otherwise, and the cost per hundred yards.

AN IMPROVER.

[Will some of our readers who are capable of giving the information asked, assist us in imparting it to our Southern friend?—Eds.]

The important information desired, may be found in the June and July numbers of the *Arator*—Hill-Side Ditching by R. H. Hardwick, whose system has been tried and approved by several of our most intelligent farmers.—*Ed. Arator.*

HUSK OR SHUCK BEDS.

DRAW strongly recommends these. He says the shucks are the best substance for the purpose that can be used. They should be the inner husks, clean and whole, and spread on some airy floor for a few days in order that they may become perfectly dry. Then they may be put into the ticks, and they will last for many years. We have some of the underbeds now in our house which have been in use more than twenty years; and with an annual ventilation and beating, by being emptied on a chamber floor, and with a little replenishing with new husks, they are now as good and lively as when new. The husks had better not be stripped up as some have done. This makes the substance finer and more liable to mat up. Let the husks be whole, and, drying in irregular shapes, they will retain those shapes and lie lively in the bed for a long time. There is a beard, or furziness, on each husk, that prevents any insects crawling through the beds; consequently they are entirely free from vermin, of which straw is apt to be full. They are, therefore, clean, sweet, and healthy. A good husk bed is equal to the best mattress for summer use, and we have slept in feather beds in winter not half so soft as these.

A NICE COUNTRY TO LIVE IN.—A gentleman who was doing well, but wanted to do better, in Kentucky, removed to a farther western State, and, in answer to a correspondent, wrote back the following flattering account of the country and its inhabitants:

"You ask me how I like the country and the people thereof. As to the land it is cheap as dirt, and good enough, but the climate is rainy, blowy and sultry. The people die so fast here that every man has his third wife, and every woman is a widow.—As for the people they are perfect christians; they fulfill the Scripture to the letter, where it says, 'Let God be true, and every man a liar!'"

BOYS! READ! AND HEED!

We copy the following from the *American Agriculturist*, for the special benefit of boys. Let every one who sees the *Arator*, carefully read and learn an important lesson.

SOMETHING FOR THE BOYS.

"A boy"—who gets up as good a letter as many men—writes us that he has sent a large number of subscribers to the *American Agriculturist*, and means to send several new ones to begin the year; and he wants to know why we do not have a "Boys' Column." We are much obliged to him, and to several other boys who have, from time to time, taken a copy as a specimen and gone around and procured a list of new names for the *Agriculturist*. We hope many will do so now to begin this new year with.—Boys can do a good deal in this way. We got up a large list, when a boy, for Judge Buel's agricultural paper, and this was our first business as a "newspaper man."

But how about that question? We will tell you, boys. We think almost all our articles in this paper are plain enough for boys, and just as appropriate for them as for men; and we do not quite like to make up a column of "small talk"—as much as to say, "Here, boys, is something for you—the rest is for grown-up folks." We want you to read the whole paper. We have, however, a good story to tell you, which is especially applicable to those now forming habits for after life. Though you may not follow the same pursuit as Joseph, the economical and industrious habits, and the scrupulous honesty that led him to a high station and success in life, will do the same for you, whether you are farmers or follow any other occupation. Here is the story of

A PENNY.

Thirty years ago there was seen to enter the city of London, a lad about fourteen years of age. He was dressed in a dark smock-frock, that hid all his under apparel, and which appeared to have been made for a person evidently taller than the wearer. His boots were covered with dust from the high road. He had an old hat with a black band, which contrasted strangely with the covering of his head. A small bundle, fastened to the end of a stick and thrown over his shoulder, was the whole of his equipment. As he approached the Mansion House, he paused to look at the building, and seating himself on the steps of one of the doors, he was about to rest himself; but the coming in and going out of half a dozen persons before he had time to finish untying his bundle, made him leave that spot for the open space, where the doors were in part closed.

Having taken from the bundle a large quantity of bread and cheese, which he seemed to eat with a

ravenous appetite, he amused himself with all the eager curiosity of one unaccustomed to see similar sights.

The appearance of the youth soon attracted my curiosity, and gently opening the door, I stood behind him without his being in the least conscious of my presence. He now began rumaging his pockets, and, after a great deal of trouble, brought out a roll of paper, which he opened. After satisfying himself that a large copper coin was safe, he carefully put it back again, saying to himself, in a low tone, "Mother, I will remember your last words: 'a penny saved is two-pence earned.'" It shall go hard with me before I part with you, old friend."

Pleased with this remark, I gently touched the lad on the shoulder. He started, and was about to move away, when I said:

"My good lad, you seem tired, and likewise a stranger in the city."

"Yes, sir," he answered, putting his hand to his hat. He was again about to move forward.

"You need not hurry away, my boy," I observed. "Indeed, if you are a stranger, and willing to work, I can perhaps help you to get what you require."

The boy stood mute with astonishment, and coloring to such an extent as to show all the freckles of a sunburnt face, stammered out,

"Yes, sir."

"I wish to know," I added, with all the kindness of manner I could assume, "whether you are anxious to find work, for I want a youth to assist my coachman."

The poor lad twisted and twirled his bundle about and after only placing his hand to his head, managed to utter an awkward answer, and said he would be very thankful.

I mentioned not a word about what I had overheard with regard to the penny, but inviting him into the house, I sent for the coachman, to whose care, I entrusted the new comer.

Nearly a month had passed after this meeting and conversation had occurred, when I resolved to make some inquiries of the coachman, regarding the conduct of the lad.

"A better boy never came into the house, sir; and as for wasting anything, bless me, sir, I know not where he has been brought up, but I really believe he would consider it a sin, if he did not give the crumbs of bread to the birds every morning."

"I am glad to hear so good an account," I replied.

"And as for his good nature, sir, there is not a servant among us that doesn't speak well of Joseph. He reads to us while we sup, and he writes all our letters for us. Oh, sir, he has got more learning than all of us put together; and what's more, he doesn't

mind work, and never talks about our secrets after he writes our letters."

Determined to see Joseph myself, I requested the coachman to send him to the parlor.

"I understand Joseph, that you can read and write."

"Yes, sir, thanks to my poor dead mother."

"You have lately lost your mother, then?"

"A month that very day when you were kind enough to take me into your house, an unprotected orphan," answered Joseph.

"Where did you go to school?"

"Sir, my mother has been a widow ever since I can remember. She was the daughter of the village schoolmaster, and having to maintain me and herself with her needle, she took the opportunity of her leisure moments to teach me not only how to read and write, but to cast up accounts."

"And did she give you that penny which I saw you unroll so carefully at the door?"

Joseph stood amazed, but at length replied with great emotion, and a tear stood in his eye.

"Yes, sir, it was the very last penny she gave me."

"Well, Joseph, so satisfied am I with your conduct, that not only do I pay to you a month's wages willingly for the time you have been here, but I must beg of you to fulfil the duties of collecting clerk to our firm, which has become vacant by the death of a very old and faithful assistant."

Joseph thanked me in the most unassuming manner, and I was asked to take care of his money, since I had promised to provide him with suitable clothing for his new occupation.

It will be unnecessary to relate how, step by step, this poor country lad proceeded to win the confidence of myself and partner. The accounts were always correct to a penny; and whenever his salary became due, he drew out of my hands no more than he absolutely needed, even to a penny. At length he had saved a sufficient sum of money to be deposited in the bank.

It so happened that one of our customers, who carried on a successful business, wanted an active partner. This person was of eccentric habits, and considerably advanced in years. Scrupulously just, he looked on every penny, and invariably discharged his workmen, if they were not equally scrupulous in their dealing with him.

Aware of this peculiarity of temper, there was no person I could recommend but Joseph; and after overcoming the repugnance of my partner, who was unwilling to be deprived of so valuable an assistant, Joseph was duly received into the firm of Richard Fairbrother & Co. Prosperity attended Joseph in his new undertaking, and never suffering a penny difference to appear in his transactions, he so completely won the confidence of his senior partner, that he left him the whole of his business, as he expressed in his will "area to the very last penny."

CULTIVATION OF THE GRASSES.

BY L. DURAND.

Foremost among valuable farm crops, is grass: the staple as it were, when compared with other vegetation. To the farmer it is of inestimable importance to secure his lands to grass, at least a goodly proportion of his domain. In fact, the foundation of all successful tillage lies in this point, namely:—"Does your farm produce all the valuable, natural and exotic grasses well; if the response be affirmative, you may muster with tillers who have the right to be considered good cultivators or at least you may indulge in the gratifying unctious that your neighbors envy you the possession of a superior farm."

Next to the farmer, who is befriended by green meadows, and uplands waving with miniature seas of Timothy," is the rural gentleman who delights in a velvety lawn spread around his house in all its refreshing greenness and glistening brilliancy. To attain this, is not in all cases an easy matter. The difficulty experienced by the amateur, is an inadequate knowledge of the different varieties of grass and their adaptability to different soils. I shall therefore give the names and description of those kinds, with which I am practically acquainted.

Timothy or Herd's grass, (*Phleum Pratense*) is one of the most valuable of all the cultivated kinds; it is of foreign origin, but adapts itself to American soil like one to the "manor born." In England, twenty-nine tons of this grass have been cut from six acres of ground, such astonishing yields are doubtless owing to high cultivation and a propitious climate. In this country, it is made use of to an almost unlimited extent for market hay, as it possesses a large per cent. of nutriment; when dry.—This fact, however, does not prove it the best; for not unfrequently it is spoiled in making in hay, while in the field; it being very sensitive of any extraneous influence. When this grass is put in the ground alone, it often grows coarse, with large stalks particularly the season subsequent to seeding. This rankness of growth, of course, tends to depreciate the quality of the grass for fodder. In order to avoid this error (for it is an error,) the seed should be put in very thick, with a generous proportion of redtop, (*Agrostis vulgaris*.) The result will be a fine, tender grass, plethoric with nourishing juice, and affording excellent pasturage and a velvety lawn.

When timothy is sown alone (a plan which I would not recommend) on grounds which have been previously well stimulated by the application of manure, the quantity of seed demanded will be about one bushel and a half per acre. In case the soil is in a indifferent condition, two bushels per acre

will be none too much. A better market hay, however, can be produced by sowing one bushel of red-top, to half a bushel, or three pecks of timothy per acre. Oftentimes, one bushel of seed will be as effectual in seeding an acre of land, as two bushels on other occasions. Notwithstanding this singularity, thick seeding is at all times advisable, whether for pasture, or lawn purposes as in unpropitious years, much seed never vegetates.—Clover is also, essential to good pasture. In case land has been previously planted to such crops as require much animal manure, it will not be necessary to put in any clover seed, as a sufficient quantity will be found growing spontaneously in connection with the timothy, the first season. The second season, timothy and red-top, will displace the clover. Timothy grass, as a general rule, grows but once in a season, although in low swales if the weather be favorable; it will after being cut, afford good early fall feed for cattle.

Red-top, in some sections of the country, is considered the very best grass for feed. Entirely alone it makes excellent fodder for stock; horses, however, prefer a mixture of timothy.

Red-top forms a close, tight sward for the lawn, and effectually shuts out weeds of almost every description. It will also grow and flourish well, on a much lighter soil than timothy, remaining in the meadow and growing a good crop of grass, long after the timothy has become a reminiscence. There appears to be two kinds of red-tops, one sort that is peculiar to the west of the upland pastures of New England, and grows about twelve inches high, with a small slender stalk, and a short fuzzy top. The other kind, the red-top proper, grows from fifteen inches to two feet with a long slender head as a top and a stalk in proportion. The small red-top, may be as nutritious as the larger kind, it certainly makes a good grass for cattle when fed down, and not permitted to run into flower and seed before the animals are "turned in."

Red Clover, we think is entitled to be called a grass, although some claim that it is not a grass proper, then call it a grass improper. A late writer in the American Agriculturist, called Indian corn one of the grasses. If this be the case, I think there need be no question but that clover may be recognized by a similar distinction.

Red clover for pasture, is the most economical use to which it can be devoted. It is also valuable as a soiler turned under when green. The amount of feed that red clover will yield in a season, is almost incredible. After it has thoroughly "headed out," "turn in" stock enough to feed it down in the shortest time, in which case it will continue to grow fresh feed during the remainder of the season. It is a biennial.

White clover is another excellent grass of the kind; it forms a thick bushy bottom, spreading rapidly over the surface, and forms a much tighter sward than the variety just described. Generally it will spontaneously appear in newly seeded meadows.—In order to make it into hay, it should be cut while in blossom, otherwise it wastes in drying, losing its nourishing properties by exhalation.

Orchard-grass—one of the great advantages of this grass is, that it will grow very early in the season, and thus afford a good bite for the cattle by the 10th or 15th of May. On this account it is also valuable for lawn purposes, giving a delicate verdure to the landscape before vegetation has assumed its summer garb. By the middle of June in this locality it is ready for the scythe. One great advantage attending the cultivation of the orchard grass, is its adaptability for growing beneath the shade of trees without any apparent diminution of vigor, or quantity to that grown in open exposure, hence its characteristic name, orchard grass. There is, however, one drawback attending this variety. Difficently is experienced in unfavorable seasons in making the seed "catch," therefore, it becomes imperative to perform the seeding with a liberal hand. Clover and orchard grass should be sown together as they arrive simultaneously at cutting condition. I believe it is the rule among English cultivators, to sow eight or ten different varieties of seed together for mowing lands, but in this country, the advantage of such a promiscuous crop is not apparent, two or three kinds is quite sufficient, say red-top, timothy, red and white clover, in generous quantities, will answer. What the soil requires is to be thoroughly swarded over to grass by the second season of mowing, rooting out all weeds and foul vegetation. Thick seeding will invariably give a finer and better quality of grass for hay, and will also, continue to grow good crops, much longer than when the seed is stintingly scattered.

Sweet scented vernal grass, is frequently found growing naturally in meadow-lands, and the by wayside, it exhales a delightful perfume of an aromatic character. It is a good pasture grass, but for hay, its qualities are not altogether desirable, it continues to flourish during the entire season of vegetation.

Kentucky blue grass, is not known among the northern farmers to the extent its merit deserves. It makes a heavy grass and hearty food for animals.—There is a variety of blue grass, peculiar to the pasture lands of New England in appearance and quality, slightly favoring its Kentucky neighbor. I should particularly recommend the Kentucky blue grass for trial among the farmers generally, in order to correctly ascertain its qualifications for enduring and flourishing in the more extreme latitudes: it has

already been proven invaluable for lawn purposes on account of its capability for enduring drouths, and also because it gives a delicate velvety appearance.

In an article of this character, I can only glance at a few varieties. Those I have mentioned are kinds in ordinary use, and are sufficient for practical purposes, whether for feed or rural embellishment. A large list of grasses, illustrated by appropriate engravings, may be found in the *Gardeners and Farmers Dictionary*.

The proper time for seeding lands to grass in this section, is generally in the spring with oats, or spring wheat, or barley. Oats however, have the preference; the only objection to which is, when they grow too heavy and rank, they are apt to lodge and the young grass is smothered and killed out.—Barley and spring wheat are not so objectionable on this account, but for some reason, grass seed with the latter crops do not catch well at all times.

Instances are recorded in which success, the most flattering has been realized by sowing grass seed with buckwheat, which gratifying result has also attended fall sowing with rye and winter wheat.

Some two years ago, I saw a meadow turned over in the month of August. The furrows were rolled down evenly and subsequently a top dressing of compost manure was applied, after which, turnips and grass seed were harrowed in. The turnips came up well and gave a large yield. The grass seed also flourished beyond expectation, and last year delighted the owner with a luxuriant crop of red-top and timothy. This success is doubtless attributable to the propitious season. In an unfavorable year the experiment would in all probability, be an utter failure, still I consider it a good plan, to get an old meadow freshly seeded where a course of other crops is not required.

The best varieties of grass for lawns, are Kentucky blue grass, red-top, timothy, white clover, and sweet scented grass. In localities occupied by trees, and the ground is much shaded, a proportion of orchard grass may be added. In the Oct. issue of the Review, I gave the formula of operations for creating a tight, smooth sward for the lawns and I therefore may be excused from repeating it here.

Pasture lands, for feeding stock are quite heterogeneous in their character. The ordinary mountain lands are and should be kept in permanent grass.—Such lands, generally afford a rich growth of natural grass which, when fed down by sheep and cattle, may remain undisturbed by the plow for an infinite period; all the attention the land requires is an occasional clearing up of shrubbery, and the application of a top dressing of some specific fertilizer;—this, with the excrement of the grazing herds, will be ample stimulus, to keep up undiminished vigor.

Open wood lands are often turned to profitable account, as besides affording provender for ruminating animals, they also give shelter, in stormy weather, or the intolerant heat of midsummer.

Such pasture lands as present no obstructions to the progress of a plow, should be brought into a course of crops, and so kept in a fertile condition, when a large amount of grass may be obtained from a comparatively small quantity of ground.

Haymaking.—Much has been said, written and reiterated about the proper time for cutting hay in order, to retain, all the nourishing juices. Most farmers concur in saying that the right time is after the grass, has attained maturity on the ground, just previous to that dryness which causes the seed to shell out.

For timothy, the time of cutting is at hand (in my opinion) when the blossoms commence drooping from decay.

If the farmer has a great many acres to go over, and the work is to be done by hand, it will be essential to begin cutting quite early in order that the latter mowing be not dried up, and the heat of the hay, dissipated by the withering and absorbing influence of the atmosphere, but horse powers and patent mowers are now in such extensive use, that no intelligent farmer will attempt a large job without patronizing their superior facilities for accomplishing labor.

Early haying in June, is uncertain and "risky" as we seldom have more than one or two fair days at a time, three or four acres of hay cut, a part laying in the winrow, and the balance in heaps, and in this situation "weather" a week of rain, is not just the thing for good fodder; here the advantage of horse power machinery is apparent even to "fogies," who still protest against these rapidly advancing innovations (as they term them) of science, and intellect, in their application to farm economy. In concluding my remarks, I would observe, that the cultivation of grass is productive of large pecuniary results, and the beauty of a well kept lawn will not be spoken of disparagingly even by the most sordid disclaimer against the inutility of non-productive, gardening. If it were not for the deep, almost perpetual verdure which bedecks rural England, she would not at the present time occupy so exalted a position, in suburban matters. It is her green fields to which she owes, those delightful cottages, which embosom her home loving people, and why do they cherish remembrances even to an advanced age, of the "cot" wherein they commenced the battle of life; simply for the reason that their homes were made Eden like with, grassy lawns, trailing ivy, fragrant flowers, delicious fruits, refreshing vistas of land and water, lowing herds, vast forests; these

combined, have done more, for English rural life, and English education, than all the efforts of her ermined law-makers.

(We especially recommend the perusal of Mr. Durand's article.¶ The novice, who is taking the initiatory steps, in growing grass crops, can derive from it, much valuable information, as it is a veritable record, prompted by experience. Our farmers in most instances, regard the special cultivation of grasses, as something quite absurd, only seeding down as a *dernier resort*, when other crops cease to be remunerative. Mr. Durand, has paid a more than ordinary degree of attention to this branch of farming, and therefore his remarks will be more valuable to the practical man.—*Editor N. Y. Horticultural Review.*

We are inclined to think with Mr. Longworth, that this country is destined to eventually enjoy as great a reputation for its wine as any of the wine growing districts of Europe. The great one, and hitherto apparently insurmountable barrier, has been the varieties of grape essential for the purpose. This difficulty has been partially removed by the discovery of native sorts, which have produced a *Liquor* that will compare favorably with the imported article. Mr. Longworth gives utterance to his experience in the following strain:—*N. Y. Hort. Review.*

Ours is the region for grape culture and manufacture of wine. The wine countries of Europe have no native grapes. Our hills and valleys are covered with vines, producing hundreds of varieties of grapes. Yet our Solomons have told us that our soil and climate is not calculated for the culture of the grape and the manufacture of the wine. I can pardon that opinion at the north, where they have the Fox and Frost grape only; but I now feel assured that I have on trial a few kinds of grape belonging to a cool region—that in the northern part of the State of New York and in Vermont—which will be valuable for wine. I am not prepared to judge with certainty of the quality of many kinds I have now on hand. But I hope this fall to submit some wines to a select committee, made from new grapes, that shall compare with some of the best wines of Europe, of the same age. If our temperance men can be induced to respect the doctrine of the Bible, and not interfere with the culture of pure wine, not many years will elapse till we can not only supply the United States with wine, but include all Europe.

To one who said, "I do not believe there is an honest man in the world," another replied, "It is impossible that one man should know all the world, but quite possible that one may know himself."

SHELTER CHEAPER THAN FODDER.

NORWITHSTANDING much that has been written during a few years past, especially in the agricultural Journals, on the true principles of winter protection and feeding of domestic animals, there is still a great amount of costly ignorance on this subject.

Last winter we chanced upon the farm of a man who possessed a fair share of intelligence upon general matters, and we were not a little surprised to find him still clinging to the old opinion that his stock wintered better when exposed to cold than if warmly housed. He kept no account of the amount of food consumed, but his observation had taught him, and truly, that his sheep, for instance, consumed more food in a cold winter than in one of moderate temperature; and he reasoned that if they ate more it indicated better health and a faster growth of flesh and wool, and of course a greater profit.—Following out this opinion, he kept a flock of sheep in an open field, exposed to bleak winds and pelting storms. In this field he had placed a number of small stacks of hay, to one after another of which they had free access, and upon which they made rapid inroads. Their only shelter was afforded by the leeward side of these hay stacks and by the stone walls that surrounded the field, together with a grove upon the northern side that served to break off the wind from that direction, but from entering which they were prevented by the intervening fence. He was quite sure they ate better when thus exposed than if housed or allowed a warm shelter around and under the barn. His other stock were treated in a similar manner. Instead of warm sheds or stables, they fed and slept in a cold open yard. He said it kept them in better "heart," and gave them a sharper appetite. As to the latter, he was doubtless correct.

But he, like thousands of others, had drawn his conclusions from a false theory, which a few careful experiments would have corrected. He should have considered that the profitableness of keeping animals depends not upon the absolute amount of food they consume, but upon the greater or less product of flesh, wool, &c., obtained from a given amount of nutriment. Had he weighed his animals in the fall and divided them, keeping one part in close warm sheds or stalls and the other part in the cold situation, he would have found that the protected animals, while consuming less food, gained more in weight than the others, and in May or June would have been in superior health and heart. In the case referred to it was found necessary to give the sheep a dose of tar, by applying it upon the noses, in the spring, to operate as a tonic, and to counteract the "running at the nose" produced by colds, which sheep "catch" as well as men.

There is a principle or two involved in feeding and nutrition which, if well understood by all who have the care of animals, would render their labor doubly profitable. The food consumed by animals serves a double or treble purpose. It supplies the waste of the system produced by the natural wear of the various organs, and keeps up respiration and the resulting heat. What is left after these ends are served goes to increase the flesh or weight.

The wear depends upon the amount of exercise taken; hence the more quiet animals are kept after allowing just enough exercise to preserve the organs in a healthy state, the less will be the amount of food required to supply the waste.

The heat of the body results from the consumption of carbonaceous food, especially the oily and starchy portions. The union of the carbon in a tallow candle or oil lamp with the surrounding air, producing the heat and the flame, has an exact counterpart in the lungs and blood of the animal, when the air drawn in at respiration unites with the oily or fatty matter in the blood and gives heat to the system.

On a warm day not much heat is removed from the surface of the body, and the animal breathes less rapidly and fully, and less fat is consumed to supply wasted heat.

If the same amount of oily food is consumed and digested as on a cold day, there will be a larger surplus to be stored away as fat.

As a matter of course, the colder the weather, the less surplus fat or profit will be obtained from the food.

Another point usually overlooked is this: In the coarser substances, such as hay and straw, consumed by animals, there is but a small proportion of oily or carbonaceous matter, and to get at this is necessary to digest a prodigious quantity of food.—This over-taxes the digestive organs, and results in more or less debility.

We have here an explanation why a smaller quantity of meal, which supplies oil and starch, (both of which are rich in carbon, the chief heat-producing element,) will keep an animal in so much better health.

The principles above indicated, which are fully established by both scientific theory and oft repeated experiment, lead to the certain conclusion that, for all kinds of animals, whether kept as stock or for fattening, it is most profitable to furnish warm shelter. We repeat, a flock of sheep or a drove of cattle will, without doubt, eat much less food and gain much more weight if kept nearly at summer-heat during winter than if left exposed to our inclement weather.—N. J. Times.

THE RED CAMOMILE (PYRETHRUM ROSEUM) FOR THE DESTRUCTION OF INSECTS.

For some years a vague report has reached us of a Caucasian plant having astonishing and eminently useful properties—that of destroying fleas and bugs; it was also known that this marvellous plant belonged to the genus *Pyrethrum*, but the specific character was uncertain. This plant has been recently introduced into Brussels, in the rich collections of the botanical garden. We hope that in some years the red camomile shall have freed our people from one of the most abominable plagues which afflict sensitive humanity. Some details of a plant of so certain a future as that the red camomile, will be, without doubt, acceptable to our readers.

In Transcaucasia, its country, this plant bears also the name of the *Persian camomile*, the *flea-killer*, the *flea-weed*. It forms a little shrub with perennial roots, branched twelve to fifteen inches high, bearing many flowers, at first a deep red, afterwards a clear or rosy red, and an inch and a half in diameter, (the size of the flowers will also cause this plant to be cultivated as an ornament in our gardens;) the stalks dry up after the ripening of the seeds, but the roots are perennial, and for some years may be multiplied by division. Freshly gathered, the flowers are not very odorous, but dried they acquire an odor so strong and penetrating that it kills all the insects and all the vermin, of which, until now, no certain agent of destruction has been found. The red camomile can bear 20 degrees Centigrade of frost, a temperature to which it is often submitted on the Caucasian mountains and on the plains elevated from 4,500 to 6,500 feet above the sea level. Although it inhabits virgin soil, it is easily brought into cultivation in gardens, and, since its energetic properties have been recognized, it is cultivated in a large way in different parts of southern Russia. One very remarkable fact is, that the knowledge of the secret of the manufacture of the red camomile powder for the destruction of fleas, &c., only dates back, even in Caucasia, about ten years, while the employment of this strong powder was known in regions far distant from Caucasia. It seems that an Armenian merchant, named Sambitoff, traveling in the south of Asia, observed that the inhabitants sprinkled themselves with a powder to prevent the stings of insects. This powder was nothing else than that made of the flowers of the red camomile. Returned to his country, our Armenian told his son of the discovery, and taught him to recognize the plant. The son became poor by reverses of fortune, but bethought himself of his father's secret; he set himself then to make this powder, and retired with very large profits from this trade. In 1818, he sold a pound (about twenty

kilogrammes) of camomile powder, at twenty-five rubles, (near one hundred francs;) and although the secret had been published, and every one knew the preparation of this powder, more than twenty villages in the district of Alexandropol were actually given up to the cultivation of the red camomile.—The flowering of the *Pyrethrum roseum* commences in June, and continues more than a month. The flowers are gathered in dry weather. In one day a good harvester can collect from thirty to eighty lbs. of these wild flowers. They generally dry them in the sun; but it is remarked that those dried in the shade have more virtue. The bed of flowers is stirred from time to time to help the drying. Three or four days is sufficient to drive off every trace of moisture. To obtain one pound of dried flowers it requires about one hundred pounds of fresh ones!—They are then reduced to a coarse powder with the hand, and by means of a little millstone, or a little brass mill, a very fine powder, fit for use, is obtained. We see by this that the process is very simple; the most difficult question is how to operate upon a sufficiently large number of flowering plants. To give an idea of the importance of the manufacture of this powder, we must state, that in Transcaucasia alone there are made each year for consumption in the Russian Empire, more than 40,000 kilogrammes. Baron Folkersahn has recently published a valuable paper on the cultivation of the red camomile. His memoir terminates with the following remarks:—That this powder preserves you from fleas and bugs; it kills flies, gnats, maggots, lice, and even the worms which are produced in the wounds of our domestic animals. To kill insects provided with wings, they mix a little of this with a substance that will attract them; for instance, to destroy flies, it is mixed with sugar. M. Folkersahn desires that the effects of this powder should be tried on other insects and worms harmful to man or to his horticultural plantations.—He adds, that if experiments demonstrate the efficacy of this powder, each person could cultivate in the corner of his garden a certain number of plants of red camomile, to kill the insects, caterpillars, &c., which ravage his field. From an approximate calculation, it is found that a space of eighteen square versts furnishes a quintal of powder. Mr. B. Roetz, who lived a long time in Russia, states that the *Insecten pulver* (powder of the *Pyrethrum*) is imported every year from Persia and the Caucasian provinces into all parts of the Russian Empire; and that, used fresh, sprinkled over the window-sills, it makes all the flies fall instantly, asphyxiating them; but that at the end of a year it loses its energy. He also states that it is the *Pyrethrum carneum* and *roseum* which produce this powder.—*Journal d'Horticulture de Belgique*.

SETTING OUT ORCHARDS—TRANS-PLANTING FRUIT AND ONAMENTAL TREES.

If you wish to enjoy fruit of the finest kind, from trees of your planting, begin setting them out now. The establishment of a good and perfect orchard, containing a succession of all the best fruits adapted to the South—from the earliest to the latest—is so easy, in our most favorable climate, that it seems a wonder to us that any land owner, who has the comfort and welfare of his family and humanity at heart, should be without one. A contemporary, who is engaged in the praiseworthy work of propagating and disseminating the choicest varieties of fruit trees has truly said: "The man who plants an orchard erects his own monument; and such a monument, built by his own hands, reflects greater honor upon his memory than towering marble sculptured by his posterity." It was a maxim of the Romans, that "old men must plant trees, for young men were not wise enough;" but, alas! we fear that neither old men or young are overburdened with tree-planting wisdom, wherever the all-powerful cotton plant holds sway. Let us not be misunderstood. Cotton is a glorious plant, and we yield to no proper estimation of its value; but that its cultivation throughout the South has been pushed onward to the almost total exclusion of many products which contribute very largely to the comfort and luxury of life, no one will deny.

In our attention to fruits, particularly, we are far behind our neighbors of the North, though our advantages in climate, length of the growing season, number of varieties, &c., surpass theirs immeasurably. For instance, in the vicinity of Augusta, we have the apple, pear, peach, plum, nectarine, apricot, quince, cherry, grape, strawberry, raspberry, blackberry, melon and other hardy fruits, common to more Northern climates, growing side by side with the fig, the pomegranate, the jujube and the olive—all denizens of the warm, semi-tropical latitudes, while a short distance south of us, the orange, the lemon, the lime, the guava, and the banana flourish equally well. With all our advantages of climate, therefore, and with every variety of soil and exposure—with the markets of the whole world thrown open, and, as it were, "brought to our very doors," by the all potent aid of steam, on land and sea—is it not surprising that the South has not poured olive "oil and wine," fresh fruit and dried, and many other luxurious dainties, into the laps of less favored Northern nations, long ere this?

That she has not done so heretofore is to us, indeed, a marvel and a wonder; but that our people should continue indifferent to their own enjoyment and interest in this matter much longer, seems hardly possible, when we reflect upon the success which has everywhere attended all well-directed efforts in fruit growing, in every section of the South, as evinced for a few years past at our Agricultural and Horticultural exhibitions, and through the columns of our own and other journals of similar character.

It is not improbable that the failures which have often attended the introduction of Northern and European trees into the South, have had a discouraging effect upon many persons who were desirous of cultivating fruit; but now that we are beginning to establish large nurseries for the propagation and sale of Southern Seedling Fruits, and the proper acclimation of Northern and foreign varieties, there can be no possible drawback upon the prosecution of this delightful pursuit, except indifference, indolence, and the want of proper information.

This information it has been, and will be, our aim to communicate to our readers from time to time, and, as the season for transplanting trees and shrubbery is at hand, a few suggestions as to the best manner of performing that important operation may not be unacceptable.

TRANSPLANTING TREES AND SHRUBBERY.

1. *The time.*—When the leaves have fallen, and after the first good, soaking fall rains, is the best time for transplanting fruit and all deciduous ornamental trees in the South; but any time before February will do.

2. *Preparation of the ground.*—If not naturally dry, your land must be thoroughly drained. Then plow and cross plow, stirring up the subsoil and pulverizing the earth as deeply as possible. The subsoil plow, following in the furrow made by a good common double-turning plow, ought to do this work well, if properly used. On fresh new land no manure will be needed; but, on poor old fields, it will be necessary either to turn under a good crop of pea vines, or give the land a heavy top dressing of compost formed of stable manure, woods-mould, broken bones, ashes, lime, &c., being careful to bury all fertilizing matter well at the final plowing. Then harrow your ground finely, stake off at the proper distance for the trees, and prepare these for planting.

3. *Preparation of the tree.*—This consists in cutting off smoothly, with an upward slant, the ends of all broken or bruised roots, and cutting in

the limbs or branches to correspond with the loss which the roots have sustained. The tap root, should, also, be cut off smoothly, leaving rather a concave space between the lateral or side roots.

4. *Planting*.—Dig your holes at least four feet across and two feet deep—throw the surface soil on one side and the subsoil on the other, and mix with the latter a small proportion of the compost before mentioned, or some good rich mould. Then throw the surface soil into the bottom of the hole, and fill up nearly to the surface with the remainder, raising the earth in the form of a mound upon the centre of which the tree is to be placed at about the same depth it stood while in the Nursery. It must then be held steadily while the finely pulverized earth is sifted in all around even the smallest roots, all of which must be spread out in their natural position, and the earth compacted by a bucket of water, when the hole may be filled up and the soil pressed down gently with the foot. If this is properly done, the tree will need no staking.

5. *Mulching*.—This is all important, and consists in spreading all around the tree for the space of three or four feet a thick layer (six inches) of old pine straw, dead leaves or coarse litter of any kind, and sprinkling over it a few shovelful of earth to keep the wind from blowing it away.—Trees, thus treated, have, with us, stood the severest droughts without any injury whatever, while those not mulched have perished.

6. *Pruning and cultivating*.—While the trees are young, namely, for the first two or three years, they may easily be made to assume the proper low spreading form, by heading back the leading shoots and cutting out interlacing limbs, but after the third year little pruning will be necessary. The ground should also be carefully cultivated in sweet potatoes, cow-peas, pindars; and other low growing hoed crops, for a few years, great caution being exercised in so plowing as not to injure either trunk or roots; but after the trees come into bearing and begin to spread, an occasional crop of cow-peas, for turning under, is alone admissible.

Augusta Cultivator.

We received, a few days ago, from a kind correspondent, a box of rare California seeds, and several specimens of a "potato climbing squash," and highly recommended for the table. Having tried the culinary virtues of this vegetable, and as it does not resemble any of the many varieties of the *Cucurbitaceæ* family we have tested, we will describe it for the benefit of our friends who are partial to this Connecticut dish. The "Potato

Climbing Squash" is a handsome, deep-ribbed, ovate-shaped fruit, about eight inches long and four inches in diameter, in the largest part. Between the ribs is a stripe of dark sea-green, upon a yellow ground—the other portions are bright yellow. The skin is remarkably thin; the flesh from one to two inches thick, of a bright orange color—very sweet, fine grained, and solid. Judging from its sound appearance to-day (12th December) it would keep till May. Like most other winter squashes, it has three carpels. When separated into halves, baked like a sweet potato, and dressed with butter, &c., while warm, it is most delicious—equal, if not superior, to the sweet potato in flavor. From its convenient size, agreeable taste, and apparently good keeping properties, this squash may prove a valuable addition to our winter vegetables.—*Western Agriculturist*.

The following is the correct official list of the medals and awards made to American exhibitors at the Paris Exhibition:

AGRICULTURE.

Mr. McCormick, of Chicago, Illinois, the Grand Medal of Honor, with the following words:—"Inventor of the reaper, which has been worked under all trials, and which is the type upon which other reapers have been made, with various modifications, which have not changed the principles of the discovery."

Mr. Pitts, of Buffalo, New York, "for machine for winnowing grain, remarkable for several inventions and the amount of work it performs."—Medal of Honor.

Bache & Kline, of New York, United States—"Balances of precision" and "Etalons de mesures"—Medal of Honor.

Maury, Lieutenant, Washington, United States—"Charts of winds and currents of the Atlantic ocean;" "Discovery of new routes shortening passages"—Grand medal of honor.

Goodyear, of New York, United States—"Discovery of the vulcanization and the softening of India rubber; considerable impulse given to the manufacture of the products of India rubber."

ARTISTS—PAINTERS OF THE U. S.

Healey—Second class medal.

May—Third class medal.

Rossiter—Third class medal.

The above are all that appear in the list published by the *Presse* on the evening of the closing of the exhibition.

M. Vattemare, American Commissioner, Marshall Woods, Esq., and one other American Commissioner, have received the cross of the Legion of Honor from the Emperor.

EXTRACTS FROM THE ADDRESS OF
FRANKLIN MINOR, ESQ., BEFORE THE
VIRGINIA STATE AGRICULTURAL SO-
CIETY, AT ITS FAIR, NOVEMBER, 1855.

THE moral obstacles which impede the march of agricultural improvement are much more serious, and insurmountable than the physical ones, because the minds of men are far more perverse than the ways of nature. Among the obstacles of this kind I note, as first in magnitude and importance, *the low repute in which work is held.*

Every farmer who hath sons and daughters ought to engrave over the vestibule of his front door in large letters, "Work alone is honorable." Honest, faithful, enduring work, either of mind or body, is the only aristocracy a free republic should ever acknowledge. They are the true *Nobles* of the land who do best their "appointed work of body or mind." Woe to the land in which the *loufer* hath more of honor than the laborer. By *loufer* I mean every class of *do nothings*, whether rich or poor, high or low, young or old. No man, and most of all no farmer, has a right to be idle. This state once produced a man when the world had need of such an one, to whom, if to any, this *do nothing* right might have belonged—a man whose name I need not call, your hearts anticipate me—that name which—

"High o'er the wrecks of men shall stand sublime
A column in the melancholy waste,
(Its cities crumbled, and its glories past.)
A monument amid the solitude of time."

But he did not claim the drone's right. His glory ever was to do his "daily work of body or mind appointed," whether it summoned him to lead embattled hosts in freedom's cause, to lay the foundations of a new government in honesty, wisdom and patriotism—or to pursue the humbler occupations of a farmer. They know not all his glory who know him only in the tented field or solemn cabinet. His agricultural letters, his farm journals, his directions to his managers, his care of his slaves, in short his attention to all the minutiae of farm work, declare his dignity and honor, no less than the loftier deeds which crowned his brow with wreaths of undying glory.

But we needed not this high and noble example to prove the dignity of enduring work. Work is honorable in itself, because it is the prime law of that system by which God created and upholds the universe—because it is necessary to the full en-

joyment and development of the powers of the body and the faculties of the mind with which man is endowed—and because it is our duty to ourselves, our children and our country—a duty which none can neglect and hope for peace. There is no honor, there can be no happiness, without work. If the sluggard say that he finds enjoyment in sloth, I leave him with his rival the hog, than which he is so far more worthless as he has neither bristles on his back nor bacon in his hams. Work is honorable in all men. The Doctor, the Lawyer, the Merchant, the Mechanic find their dignity and their honor, as well as their prosperity in the fidelity with which they do their daily work. Neither the character nor the scene of our work can strip it of its dignity, *if we do it well* and in a faithful spirit. When Epaminondas had conquered the foes of his country, and won for himself immortal glory, his envious enemies in order to affront and degrade him, elected him "scavenger of the streets." He accepted the office, and discharged the duties of it faithfully. The glory was his, the shame recoiled upon his enemies.

All work faithfully done is honorable. But some sorts of work are more agreeable than other sorts. In this respect, which can be compared with ours? In the open field and shady forest—at early dawn and dewy eve—amidst the carols of birds and the music of nature—surrounded by all that is lovely and sublime who hath so sweet a work as the farmer? May we not be pardoned if we sometimes exult over the pent-up Lawyers, Merchants and Mechanics, who toil in cavernous walls, with no songs, no dew-drops, no sunshine? Oh! the farmer has a noble and pleasant work. Why then is work in low repute? Why is it thought genteel to have nothing to do? There is a screw loose somewhere in our moral system, else so false a notion, so vile and pernicious a heresy, could never have found a place in it.

It has been said that the existence of slavery among us makes work degrading. If this idea was entertained, only in that land of *isms* which lies North of us, I would not notice it. But some of our own sensible people have sanctioned this erroneous opinion. Even admitting slaves to be degraded, (which I by no means will do except for the argument's sake) I cannot at all comprehend, how their doing a thing in itself honorable or indifferent can make it degrading in others to do the same thing, when duty calls on them to do it.—Base men do such things every day without deterring the good from doing the same things. Dr. Webster ordered a fat turkey for his dinner the day

before he was changed, but ocular demonstration this day has assured many of us that the murderer's taste has not yet driven that popular delicacy from the tables of the fashionable and refined.—Phineas T. Barnum sometimes makes temperance speeches, but, thank God, his leprous touch of that almost holy cause has not abated the zeal of our noblest men in the great and good work. Negro girls have been the nurses of white children in Virginia since time immemorial, but slave nursing has not made and never will make it degrading for a mother to fondle and nurse her infant child. A thousand other instances might be mentioned, but these suffice to show that the vilest wretch that crawls upon the earth, cannot make it degrading for an honest man to do what his duty demands, by having done the same thing before him from any motive whatever.

Slaves do here what white men, called free, do elsewhere. If it is the color of the land which degrades the labor, then why is honest labor in as low repute at the north as at the south—nay lower, if we may judge from the shifts made to avoid it, as witness wooden nutmegs and deal hams? Will it be said that the slave has made work degrading, because he does it in obedience to the command of a master? Then I say that the white slave obeys a master too, and oft-times far harder master than the black one. The northern hireling obeys a master who doles out to him the merest pittance of the fruits of his daily toil, and gives him no love nor sympathy along with it. But obedience is not degrading. It is the first law of parental discipline, social order, religious faith, and everything excellent in heaven and on earth. Obedience to rightful authority, so far from being degrading, is honorable and ennobling in all the highest positions of life. When an American officer in the revolution was commanded to storm Stoney Point, did he degrade himself by obedience? Far from it. He did as he was ordered, and won immortal glory. The highest functionaries of the land find honor in obedience. The slave is not degraded by obeying his master; he is more of a gentleman, and ought to have more honor and respect for every act of faithful obedience, than the white citizens of Boston, who disregard the laws of the land, and by daily acts of disobedience violate the rights of others, and trample honesty, good faith, duty and justice under their feet. No matter what the work may be, it cannot be degrading for any man to do it, when duty commands, and this whether it is usual to be done by freemen or bondsmen. If any kind of work is degrading,

I would take *shoe blacking* to be so. But a high dignitary in one of the Virginia churches told me some years ago, that he once chanced to visit the bishop of a northern State, a man of learning, wisdom and exalted piety, who kept no man servant. The gentleman tarried all night, and when he looked out from his window in the morning he beheld the venerable bishop seated on the steps below blacking his own and his guest's shoes.—Since holy bishops have blacked boots and Epaminondas swept the streets, I think the degradation of any kind of work by slave labor may be set down as an antique *myth* of northern *ism*.

Mischievous as have been the effects of the pernicious notion that slavery degrades labor, I think that even worse evil has come from the farmer of Virginia mistaking what his true work is. It is not the doing of any kind of work indifferently, that declares a man's "dignity and wins the regards of heaven on all his ways." But it is doing his "appointed work." A man may degrade himself almost as much by doing a wrong work, as by doing none. Now the work of the farmer of Virginia is an intellectual, not a bodily work; and, it is because intellectual labor is much more difficult and repugnant to us than bodily, that we have chosen to mistake our true work, and toil with our hands more than with our heads.

It is true that in some regions of Virginia, as is generally the case at the north, the husbandman must be, to a considerable extent, his own laborer. In all such cases bodily work is the "farmer's appointed work," and he finds honor as well as profit in doing it faithfully. But in most parts of this State the farms are large, and the slaves numerous, and on them the master's work is to *know* rather than to *do*—to order, direct, control, plan and supervise all the complicated operations of the farm, with superior wisdom and knowledge, and not to labor with the hoe and plow. This is a work of the mind, requiring much study, deep thought and profound science. It is a hard and responsible work, and even wise men shrink from responsibility; hence comes it that the high intellectual calling of the Southern farmer is much too often relinquished for the easier and less responsible work of the body.

Unfortunately for agriculture progress our youth commence farming generally with very imperfect training for the business, and with very vague notions of what a farmer's occupation in Virginia ought to be, which almost compels them to get their *head work* done second hand by neighbors and overseers as ignorant and less interested than

themselves. When we consider this we may well cease to wonder at the gullied hills, egregious blunders, and numerous failures which mark the careers of many farmers of Virginia. The captain of a man-of-war does no work with his hands, he neither trims the sails, nor holds the helm, nor heaves the lead. Has he therefore no work to do? Is he a drone? Could the ship sail as well without him? Far from it; he is the very soul of every operation on board. So would it be with every Southern farmer. His office is to *know* all that can be known about farming, (as the captain does about navigation) and to direct, superintend and control the execution of the farm work by them whose business is bodily labor. But it is so much easier to work with the hands than to do all this, and men are so prone to seek their ease, that the farmer too often surrenders his high office for a much ignobler one. The same indolent spirit would make the captain of a ship exchange places with his boatswain.

What a shame that any should wish to shun a high and noble work, which affords "ample scope and verge enough" for the loftiest and brightest intellects! When will our young farmers learn to know their true work, and endure the mental toil necessary to win the glory of it? Yet must they know too how to do all the bodily work of the farm, and that not theoretically only, but practically;—and the better they so know it, the better farmers they will be. Not because they shall do the work themselves, but that they may know how to have it done, and when it is done properly. Neither must they withhold their hands from any kind of work, if duty calls them to engage in it. But their daily work, their "appointed work which declares their dignity," is of the mind.

Some men speak lightly of *head work* as being easy. But I do not know any kind of work which we are more prone to shun, or which men do less of, or do worse. Of all my acquaintances among my brother farmers not one in four thinks closely, carefully and systematically about his business.—The other three are copyists, or tread the beaten track of their forefathers—flaring up occasionally in fitful efforts of sickly and unfruitful thought.—Thinking is the hardest work men have to do, and hence we have so few real thinkers. Will any say "Farmers have no need to think"? Then why have agricultural journals? Why have this society? Why these yearly avalanches of the people on this most hospitable city? Do men come here merely to glut their eyes with sight-seeing, and gorge their maws with feasting? Do they bring

hither with them no more thinking mind than the stalled ox? Seeing do they see not, neither understand? Surely, surely not. We come hither to get knowledge and to communicate it. The prime benefit of these gatherings is that they set us to thinking. Hence we get wisdom by hearing and seeing, because and in proportion as we have the power to think. Men learn to think by observation, experience and education; and by intercourse with other men the latent sparks of thought are kindled, just as the fire of the flint is stricken out by the steel. Agricultural progress advances with new and rapid strides as men acquire new powers of thought from observation and experience. When our Fairs cease to afford them they will have become effete and worthless, and will do no good to any but premium hunters. When their value becomes to be estimated in dollars and cents, they had as well be abandoned.

I have said that the power to think may be acquired by proper educational training. I am quite sure it may. But it is much to be regretted that many of us begin our profession with such imperfect preparation for the duties of it, that even after a life-time spent in the work, we have hardly acquired the faculties of deuection and generalization which are necessary for the discovery of truth. Hence some in despair of establishing the science of agriculture on the firm basis of experimental truth, have abandoned the work, crying out with the Preacher, "vanity of vanities, all is vanity." But not so. Truth, indeed, comes slowly, but she comes surely to them who seek her right. Men gazed at the starry firmament more than five thousand years before the red streaked apple, which fell at Newton's feet, suggested to his mind the law of gravitation, and revealed the mysteries of astronomy. Newton's mind was well stored with learning. Education had trained him to think, else had that red streaked apple fallen in vain as unnumbered ones had fallen before by every autumnal wind. If we would watch the truths of agricultural science, we must train the farmers how to hunt for them.

This brings me to the consideration of another moral obstacle in the way of agricultural progress which is the want of scientific knowledge. By "scientific knowledge," I mean all that knowledge of farming operations which a man may acquire, either from books or from other men, independent of his own practical observation or experience.—This may be a broad definition of agricultural science, but I think it, nevertheless, the true one. The science of any profession is what men have

learned about it—what has been settled by repeated experiment and observation. It is so of law and medicine, only they have become more emphatically *book* sciences and professions than farming—not from any substantial difference in the professions themselves, but because men have been trained and educated for those professions and have not yet been for farming. When the barbers were the surgeons, there were few if any books about surgery; nor is it likely the barbers could read what there were. Law is perhaps the oldest book profession, but was once an unwritten science, as farming now is. Science is nothing but garnered knowledge; and that men have no better garnered up the treasures of agricultural observation and experience, has not arisen from their being no fixed principles of husbandry, but rather from this, that men have never been taught husbandry as a *science* before they entered upon the practice of it as a *profession*; and perhaps, partly from this circumstance, too, that nature does so much of the farmer's work for him that he has been ashamed to record his own mite. But this state of things is fast passing away; whether it be that nature is growing more churlish, or man more conceited, I know not. Agriculture is fast becoming a written science in the most enlightened States of Europe, and it advances in importance as it does so. "Mr. Colman in his able report on European Agriculture, made in 1844, describes only nine agricultural schools, though others then existed on the continent of which he was not probably aware." Dr. Edward Hitchcock in his report to the legislature of Massachusetts in 1851, on the same subject, reports three hundred and fifty two schools, most of which had come into existence since Mr. Colman.

Men have erred of late years, it seems to me, in the importance they give to some branches of agricultural science. Thus, a patriotic citizen of the State of Georgia lately gave \$20,000 to the Georgia University to endow a professorship of *Agricultural Chemistry*. Now agricultural chemistry is a good thing, but bears about the same proportion to the whole science of agriculture, that contingent remainders and executory devises do to the science of law, or *Materia Medica* to the science of medicine. Agricultural science is made up of the experience men have gained in the culture of the earth; and there are certain fixed principles of that culture, established by experience, just as of any other branch of human knowledge. That there are not more of them, is our shame; and is due mainly to men not studying the theory of ag-

riculture, just as they do the theories of law and medicine, before beginning the practice of it.—How long would it have taken law and medicine to have accumulated facts enough to make book sciences of them, if the Lawyers and Doctors had never looked into a book before commencing the practice, and scorned to look into one afterwards? If we made our attorneys and physicians as we do our farmers, they would make sad havoc of our property and carcasses. Some persons rail at book learning in farming matters: But do these same men think lawyers less worthy of trust in important business, or confide their lives to physicians with less confidence because they have read the books which contain the observations and experience of other lawyers and doctors? Far from it. Then why rail at agricultural reading? If a few conceited asses have read Leibig's Chemistry and committed foolish blunders, does it therefore follow that clever men will derive no profitable knowledge by studying the principles of natural science, which explain the phenomena of the vegetable kingdom? Science is a deep well, from which men draw according to the strength of their understandings. Wisdom lies at the bottom of it, and it takes deep and long draughts to pluck her up. The surface is covered with the intoxicating froth of conceit, which too many have sipped and gone mad, and hence the stupid prejudice against scientific agriculture. As well call the chicanery of the pettifogger the science of law, or quackery the science of medicine, as the blunders of a few smatters in agricultural chemistry the science of agriculture.

All that our fathers knew about farming would now be at our command if agriculture were a book science. Will the sneerers say our fathers knew nothing? Who that has read the early volumes of the old American Farmer will admit it? There is wisdom and experience enough in "Skinner's American Farmer" and in "Ruffins' Farmer's Register" alone, to make agriculture a written science, if we had some agricultural Maury to examine and digest these scattered stores of knowledge, and reduce them to the form of practical farming directions. When Mathew F. Maury modestly applied to the Secretary of the Navy for leave to examine the piles of old moth-eaten log-books which cumbered the Bureaux of the department, who could have foreseen that the "sailing directions" would have been the result of his patient labor? Already has the world derived such advantages from Lieutenant Maury's investigations and discoveries, that his name is ranked among the great-

est of the living benefactors of our race, and the crowned heads of Europe vie with one another in heaping scientific honors upon him. They whose interest it is to know best, tell us that the "sailing directions of the winds and current charts," have done more to advance commerce than any other thing since the discovery of the mariner's compass. Now these "sailing directions and wind and current charts," are not the creations of a single mind, but the fruit of a patient and toilsome investigation of what individual sailors had seen and observed in their separate voyages. The experience was all there before Mr. Maury began his great work: but it was wholly valueless, because not digested and prepared for use. His industry and genius have found a treasure which has enriched the world, where other men dreamed not there was a farthing's worth.

So it is now with agricultural experience: what they who went before us did and knew about the culture of the earth, lies useless, because scattered through the journals of their day in fragmentary and undigested essays. I should rather say that some of their knowledge is in such journals.—Much the larger part of their experience, which could now be so invaluable to us, perished with themselves, because there was no garner into which it might be gathered, and no lettered priesthood of agricultural knowledge to harvest and secure it. When shall this shame cease? Is all we now too to die with us, and are our children to rope in darkness as we have groped?

GROUND OATS.—Ground oats furnish more nutriment and keep the bowels in better condition than when served out whole. By grinding them we separate them into a myriad of particles, and present them to the gastric solvents in a form deculated to secure their speedy digestion—in effect, they are in a condition favorable to speedy assimilation.

Ground oats are more nutritious than whole, for the same reason that flour is more so than unground wheat.

Ground oats contain more of the nitrogenous, flesh-making principle, than any other kind of food; at the same time they furnish a mixture of coarse and fine food—the husks of the oats constitute the first, and the meal the latter. The coarse material serves to keep the bowels in a solid condition—irritate and excite mucous coat, and thus obviate the necessity for drastic medicine. They require, however, a certain quantity of sweet ley, in view of distending the stomach to a healthy capacity.

RECEIPTS FOR THE ARATOR.

SINCE MARCH No.—\$1 each, Dr. S. D. Rankin, Mt. Ullu, Rowan Co., N. C.; Jones Adams, N. B. Dozier, Mt. Nebo, Yadkin Co., N. C.; F. M. Garrett, Falkland, Pitt Co., N. C.; W. M. Faison, Warsaw, Duplin Co., N. C.; Thor. Robinson, Wadesboro', N. C.; J. Price, Tyrell Burgess, Taylorsville, N. C.; W. A. Dunlap, Bethany Church, N. C.; A. Cameron, Summersville, N. C.; Jacob Ramsour, (W. W.) Lincolnton, N. C.; B. Kinney, Martindale, N. C.; Dr. S. W. Young, Oak Hill, Granville Co., N. C.; G. W. Valentine, Harrellsville, N. C.; J. G. Rives, Battleborough, N. C.; A. Rogers, Leasburg, Caswell Co., N. C.; \$2 each, W. D. Jones, (Sulphur Springs,) Warren Co., N. C.; Thos. S. Campbell, Warrenton, N. C.; Gen'l. S. F. Patterson, Palmyra, Caldwell Co., N. C.; \$1 each, E. D. McNair, Hillsboro, N. C.; Jonathan Horton, Boone, N. C.; Daniel Latham, Pautiga, Beaufort, N. C.; Henry Elliott, Fayetteville, N. C.

TABLE OF CONTENTS FOR APRIL 1856.

A new seedling strawberry,	400
Agricultural Society—Executive Committee,	401
A nice country to live in,	402
Agriculture,	410
Address of F. Minor, Esq.—extracts from,	411
Cashmere Goats,	395
“ “	397
Cotswold Sheep—importation of,	399
California seeds,	410
Farm and Clover culture—division of,	393
Grasses for the South,	385
Georgia—the wine and vine of,	401
Grasses—the cultivation of,	404
Horizontal Ditching—Southern land murder,	401
Husk or Shuck Beds,	402
Horticulture and agriculture,	399
Plum-tree—new method of perpetuating,	410
Supplement to the report on Hussey's Locomotive Steam plowing engine,	398
Something for the boys,	402
Shelter cheaper than fodder,	407
Setting out orchards,	409
The Red Camomile,	408

W. L. POMEROY,
PUBLISHER.

BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

SCIENTIFIC INFORMATION FOR THE WHOLE WORLD.

CHAPMAN'S GREAT DISCOVERY.

THE MONTHLY RAINBOW, or Chapman's Precalculations for elementary changes, based upon the discovery of the physical laws and harmony of electrical action pervading the solar system, as involved in the differing effects of light modified (or polarized) by differing angles of reflection on a large scale. This important discovery of the laws of nature which regulate the changes of the elements constitutes a subject of magnitude and importance, perhaps unsurpassed by any other on the pages of historic record. The surprising accuracy with which Dr. Chapman is enabled to pre-calculate all elementary changes predisposing more to storms, earthquakes, auroras, &c., and also atmospheric changes within the hour for each day, months in the future, and the physical effects on the health, feelings and humors of mankind, must be admitted by all unprejudiced minds to be of incalculable advantage to the whole human race.

In presenting the RAINBOW to the public, we do not claim it to be an infallible weather guide. But this much we do claim, that it will be found to be correct to the letter, eight times out of every ten. All we ask is a candid examination. Terms of RAINBOW, \$1 per year, in advance, 50 cents for six months.

CHAPMAN'S PRINCIPAL, or NATURE'S FIRST PRINCIPLES, cloth binding, 12mo., 200 pages.—Volume first contains a full explanation of the discovery to which Dr. Chapman has devoted the last nine years of close observation. Published every six months, (March and September,) price \$1 per volume, for which it will be sent, post paid, to any part of the country. First volume now ready.

Address **CAMPBELL & Co.,**
No. 73 South Fourth St. above Walnut, Philada.
Agents wanted in every county.

FARMER'S HALL,

RALEIGH, N. C.

The subscriber is general agent for the sale of Agricultural Implements and Farming utensils. Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

E. L. HARDING.**Clothing and Furnishing Goods.**

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents. FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

MELON SEED.

LAST YEAR was notorious for the quantity and quality of that luscious Southern fruit, Water and Musk Melons, in this section. Those who visited Wilmington, know something about it. Melons have been raised here weighing from 35 to 50 odd lbs.—the large kind of Carolina Melons. We have some of the seed of these melons (both kinds) to spare, and will forward to persons wanting for \$1 per pint. Address **C. H. ALEXANDER,** Topsail Sound, New Hanover Co., N. C., Dec. 31st, 1855. 11-3t

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

WILLIAMS & HAYWOOD,
RALEIGH, N. C.WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.**DYE-WOODS & DYE-STUFFS,**Oils, Paints, and Painters' Articles,
VARNISHES,WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,All the Patent or Proprietary Medicines of the Day,
SUPERIOR LIQRS.Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, MAY, 1856.

NO. II.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month, at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

THE HOP CULTURE

AND COMMERCE OF OTHER COUNTRIES COMPARED WITH THAT OF ENGLAND.

By P. L. SIMMONDS, author of "The Commercial Products of the Vegetable Kingdom," etc.

The following admirable article on Hops, forms the leader for the London *Farmer's Magazine* for October, and gives the comparative production of hops in this and other countries. It will be seen that the hop crop has increased annually, both in quantity and price. We would call the attention of our readers, who may be engaged in the hop culture, to our article on the "Preparation of Hops for Market," on page three of the present volume.—[*Ed. Working Farmer.*]

Believing that the extent of the foreign culture and trade in hops is but little known to our own hop farmers, I have collected together some recent statistics and data, showing the progress that is making in other countries, which may prove useful for reference at the present time.

Hops are becoming an important article of foreign as well as domestic commerce in America. The

hop plant was introduced into the British N. American colonies soon after the first European settlements, and cultivated in New Netherlands in 1629, and in Virginia as early as 1648.

The quantity of hops exported previous to 1848 from the United States was as follows:—

1842	399,188 lbs.
1843	1,182,565 "
1844	664,633 "
1846	286,754 "
1847	1,227,453 "
1848	257,016 "

1294 tons of hops were stated to have been used in America in 1850. The amount of hops raised in the United States in the year 1839, according to the Agricultural census returns, was 3,497,029 lbs., of which New England raised 707,743 lbs., New York 2,536,299 lbs., and all the other States but 253,987 lbs. Vermont, New Hampshire, and Massachusetts are the principal hop-growing States in New England. The first named raised in 1849, 288,023 lbs.; Vermont increasing 239,886 lbs. in ten years; New Hampshire 13,749 lbs.; and Massachusetts diminished 133,200 lbs.; while New York increased in ten years 2,089,040 lbs. The hop trade of America is destined to be one of great importance, although the produce is yet rather limited, the breadth of land devoted to the cultivation not exceeding 8000 acres. The average crop and consumption hitherto have not exceeded 20,000 bales, of 200 lbs. to the bale. Last year's growth was beyond the average by at least 6000 to 8000 bales, and a brisk export demand was the result at very remunerative prices—

isfy any reasonable mind." But let it be considered that the farm is not the only field of labor in life.—There are multiplied duties to perform beyond the plowed field—the meadows—the barn yard or the hay rick. The individual has the duties of a man to perform. He will impress upon his family, the social circle in which he moves, and the community at large, just in proportion as with him ignorance or intelligence preponderates, a corresponding influence of his own character; he will leave a decided mark for good or evil along the whole path of his being, involving no small amount of individual and public happiness or misery. The employment in which he is engaged will be rendered honorable or otherwise in exact proportion to the general and individual intelligence possessed by those engaged in its pursuit, and yield to him and the community at large benefits proportionate to his mental acquirements.

If these sentiments are correct what course of education ought to be adopted for the American farmer? I answer, nothing short of an extended and liberal course of study. He should be in every sense of the term an educated man. He must be able to think and reason correctly, and to speak and write well. To perform these things a thorough culture of the mind is demanded. To bring out its powers to full action it must be trained. The employment and discipline of the intellect and physical powers are both strengthened by exercise, and the former no less than the latter.

To think and reason well the mind must not only be stored with facts, but disciplined with an extended course of study. To make a good writer he needs a knowledge of the classics; to speak handsomely and persuasively he must be trained by practice.—With these a thorough elementary course of instruction in the various branches of Natural History, Agricultural Chemistry, and theoretical and practical farming. History Ancient and Modern, Mental and Moral Philosophy, Rhetoric, Physiology, Political Economy, and Practical Surveying, are required to constitute the *lowest* standard of the American farmer.

I am well aware that not a few will say "that to accomplish all this will cost too much time and money—that there will be no opportunity left for practical farming—that the individual will acquire the requisite taste or habits for labor or the ability to endure it." In reply I would venture the assertion that there is ample time and opportunity for securing all these ends. Two or three hours each day could well be spared from literary or scientific pursuits, for labor. The labor will take the place of trifling or idle pastime, and will give the mind of

the individual greater intellectual power, and tend to shield him from the dissipation of effeminacy so prevalent an evil in all our colleges.

Thus have we endeavored to suggest a proper standard, it remains briefly to propose a plan to accomplish this important end. For this purpose there might be established an institution where practical and theoretical agriculture can be united. Where the Professors of the laboratory or recitation room shall not only be distinguished for their scientific erudition, but able to go into the field side by side with the student and touch with their own hands the soil the elements of which they analyze. Our country embraces some men capable of filling such places. Should institutions on this plan be adopted it would not be very long before a plenty of teachers of this stamp could be obtained.

An institution for this object should be liberally endowed, and should be located as far as may be away from city influence. Its site should be well chosen where art could blend with nature and each in time become marked with its own peculiar features of beauty. Where the surrounding atmosphere both moral and physical, should be healthful. Its halls should be fitted up with taste and elegance, and provided with every means of instruction, and all the buildings of the establishment should be perfect models of their kind.

Here the young American farmer after being fitted by preliminary studies to enter the institution should receive a four years' course of instruction, that when graduated he may be qualified not only to manage a farm, but to stand in the front rank of the scholars of his country. With habits of industry well established, hands strong for labor, a spirit ready to overcome every opposing obstacle, a cultivated taste, and a mind enriched with learning, he will in no way assimilate to that *exquisite sort* of character which may be found in some of our present institutions and which is a mere abortion of learning; but will make a staunch, liberal and energetic farmer and citizen.

S. W. GOLD.

West Cornwall, Feb. 28, 1856.

DEVON COWS.—The editor of the *Massachusetts Pioneer*, says—"In regard to Devon cattle we say, after an experience of eight years, that these are the only kind which we have any desire to keep. They are unquestionably the richest milkers that we have in this country, and the half bloods make the best oxen which are seen in Massachusetts. We have repeatedly offered to set the milk of six Devon cows against the milk of six of any other breed, and give a premium on the richness. Four beer quarts of this milk, in September and October, have repeatedly produced a pound of excellent yellow butter."

DEEP PLOWING AND PULVERIZING.

It would seem that enough had been said and written on this all-important subject to entirely exhaust it; but so long as farmers continue to impoverish their lands and diminish their crops by shallow plowing and imperfectly pulverizing their grounds, we shall be found sounding the alarm.—There has not come under our observation the award of a solitary premium by any State or county agricultural organization for the best acre of corn or other grain, but what was the result of deep plowing and thorough pulverizing. The advantages of properly preparing the ground for the reception of any crop are so apparent, that merely to state them should insure their general adoption.

Were we traveling over a country where we were constantly meeting with obstacles—having now to clamber over a large mass of rocks, then toil up a high hill, now descend into a deep chasm, then grope our way up a declivity, and thus spend the day in surmounting one difficulty after another—how little progress we should make compared with him who has been traveling over an even, smooth, and uninterrupted plain! Just so it is with the roots of vegetation: if the ground is left cloddy and rough, and only partially broken with the plow, you may rest assured that your corn or other grain will exhaust themselves sending their roots out in search for nutriment over these barren clods, and amongst obstructions where little is to be found, and at the end of the day have made as little progress as the weary mountain traveler. In the ordinary way of plowing from two, three, or four inches in depth, and not harrowed so as to pulverize the clods, there is but very little nutriment made accessible to the plants; when we take into consideration that the roots of wheat, oats, barley, corn, and other grains penetrate downward, when the looseness of the soil will permit, from twenty to forty inches, and more than double that distance horizontally. If you would have our grain grow to a full crop, give it the advantage of all the nutriment the earth contains, by giving the brous roots access to the entire mass, which can only be done by deep plowing and thorough pulverizing, which will insure a crop under all circumstances. If the season should be unusually wet, the lower roots will be more or less injured by water, at the upper ones will make the crop. If, on the contrary, the season should be exceedingly dry, the upper roots will suffer, while the lower ones will supply nutriment to the stalk. In either extreme, you see the crop will mature under proper treatment. If you say this requires too much labor for preparation? If it requires double labor to prepare, it does not require one-half the labor to cultivate, and in the aggregate you save labor by cultivating

your lands broadcast before you plant. But the greatest benefit arising from deep plowing is not yet told; we mean the increased productiveness of the soil. "Soils generally have in them some of the elements of fertility so locked up by strong union with other substances, that plants cannot appropriate them to their uses, unless something be added which has the power to destroy the natural combination, release the fertilizers, and render them accessible to the wants of vegetables." This may be effected by freely subjecting or exposing the different elements of fertilization contained in the earth to the action of the atmosphere, whereby the soluble salts are unlocked or set free, and the whole mass or depth of earth, stirred by the turn and subsoil plows, in a few years becomes one entire bed of rich productive earth.—*Tennessee Farmer and Mechanic.*

SPECIAL MANURES.

The past spring I procured several barrels of poudrette, for the purpose of testing its utility for top dressing, purchasing at the same time several other articles held in high repute for the same purpose.—In order to give the several substances a fair trial, I selected a piece of poor soil which had been cropped in grass for eight years, and which, the previous season, had produced less than nine hundred pounds of hay per acre. From this land I removed all the stones and other impediments that could possibly obstruct the operation of the scythe, and then rolled it with a loaded roller, to make it as even as possible before applying the dressing. The experiment patch was one acre which was accurately divided in eights. On the first division, I spread in April, six loads, of thirty bushels each of stable manure, perfectly decomposed. After spreading, the roller was again applied. Nothing more was done till the crop was harvested. On the second division, I put the same quantity of compost, formed of swamp muck, wood ashes, quick-lime, gypsum and chip manure, the relative proportions of the several ingredients not being ascertained, and applied the roller as in the previous case. The third was dressed with half a cwt. of poudrette, broadcasted evenly by hand; the fourth, with half a bushel of gypsum; the fifth with guano, thirty pounds; the sixth with superphosphate, thirty pounds; the seventh with five bushels of hydrate of lime (slacked lime) and the eighth with night-soil, which had been deodorised by the admixture of quick-lime and sulphuric acid—the quantity used being as nearly as I could ascertain, twenty bushels to the acre.

The grass on all these took an early start, and came forward vigorously, with a most luxuriant development of foliage, which was sustained till the grass was cut. From the very first appearance of

the blades, however, until the introduction of the scythe, the divisions manured with the stable dung and the compost, took and maintained the lead.—The former was the best; the grass being finer and far more dense; but there was an obvious superiority in length, in favor of the latter. It was also of a deeper green. The division manured with pond-rette, presented a very fine appearance till the grass shot out for heads, when its vigor suddenly diminished. The gypsum acted, as it always does, with energy, producing a fine, thick carpet of verdure, sprinkled throughout with trefoil, although that excellent grass had not been noticed on the land, or in the immediate vicinity for years. The fifth section, dressed with thirty pounds of guano, being somewhat less even than the others, did not present so uniform an aspect, probably in consequence of the guano having been washed from the more elevated points, to those more depressed, where the luxuriance of the grass was astonishingly great, much of it lodging before flowering, and suffering in consequence, to an extent probably of from ten to twenty per cent. On the part where the superphosphate (De Burg's) had been applied, the quantity thirty pounds, there was an early start and vigorous and well sustained growth until the blossoms began to issue from the bud, when it suddenly ceased growing, its subsequent growth being small. The hydrate of lime acted with energy, as the soil was of that peculiar character which renders the application of this mineral always beneficial, being anticalcareous, and consequently deficient in those important and valuable mineral constituents which lime is known to supply. But on this piece, the vegetation was less luxuriant than on other parts of the field, and the grass was more wiry and less succulent when made.

The night soil vindicated its claim to the title of a most valuable fertilizer, and sent up a rich mass of foliage, which made excellent hay; but it was not equal to that on the portion manured with stable dung, and somewhat inferior to that produced on the compost department both in quantity and quality. The crop was cut and made on the same day, and when thoroughly dry, it was weighed with care by a person wholly disinterested, and on scales officially sealed the day before they were used. The weight of the several parcels was as follows, viz:—

No. 1,	361½ lbs.
" 2,	254½ "
" 3,	216 "
" 4,	206½ "
" 5,	240½ "
" 6,	250 "
" 7,	261½ "
" 8,	219½ "

This experiment I shall repeat next year on an acre of similar soil, and with the same scrupulous accuracy as to the results that was observed in this case.

C.

Germantown Telegraph.

METEOROLOGY FOR FARMERS.

WE give the following letter from Prof. Henry of the Smithsonian Institution on the subject of Meteorology—addressed to Hon. Mr. Wells of Maine. The subject is one of much interest to the agriculturists of our country, and every advance that is made will be useful to them.

SMITHSONIAN INSTITUTION,
WASHINGTON, DECEMBER 5, 1855. }

DEAR SIR:—At the suggestion of Mr. J. D. Parker, of Steuben, I address you on the subject of establishing, through the aid of the State Legislature, a system of Meteorological Observations in Maine.

I need not impress upon you the importance of observations of this kind when simultaneously made, with reliable instruments, at different points throughout a country and in accordance with a well organized system.

There is no subject of more general popular interest than that of the changes of the weather and the relative temperature and humidity of the district we inhabit. And when we consider that climatic influences enter even into the constitution of national habits and peculiarities, determining, as they do in part, the pursuits and temperament of an entire people; or when we reflect how much of our personal comfort and convenience depends on the climate in which we live, and how sensibly our feelings and even our mental operations are influenced by the pressure, temperature and electricity of the air, it becomes apparent that any researches which may tend to throw light on the laws which regulate the variations of these elements must be viewed with interest and approbation by all who are capable of appreciating the value of scientific certainty with respect to those atmospheric changes by which we are so constantly and intimately affected.

But meteorological observations are not alone interesting from a purely scientific point of view.—The facts which they reveal are directly applicable to the wants of the husbandman; they aid in enabling him to predict, without a ruinous series of trials, what plants he can safely cultivate or what animals he may succeed in rearing. The amount of heat and moisture in given places being known, together with their comparative distribution throughout the several seasons, the farmer can determine whether, in the course of a number of years, he will be a gainer or loser by introducing the culture of a plant new to his locality.

In all the educational establishments of Europe or the diffusion of a knowledge of Agriculture, Meteorology forms a prominent branch of study, and in all countries in which the art of husbandry is encouraged by public bounty, systems of Meteorology are established.

The practical value of meteorological statistics is not, however, confined to the farmer, but is shared by the engineer and the physician. The former employs them in his estimate of the supply of water which can be obtained for the purposes of locomotion or mechanical power, and the latter in the study and amelioration or cure of diseases. To the mariner a knowledge of the currents and winds of the ocean is of the greatest importance; but these can never be fully understood or their changes predicted without a series of contemporaneous observation on the land as well as on the sea.

A system of meteorological observations established in the State of Maine, the most northern portion of our Union, would not only afford results valuable in themselves and immediately applicable to practical and local purposes, but, in connection with other systems founded on the same plan and purchased with similar instruments, would afford the means of discovering the general laws and peculiar characteristics of the climate of this continent and of making the most interesting additions to the physical geography of the globe.

The value of systems of simultaneous observations in a uniform plan is now more widely known and more highly appreciated than ever before. National Governments in almost every part of Europe have established them, and in this country the General Government as well as the Legislatures of several States have made appropriations for the same purpose. The Medical Bureau, under the direction of the Surgeon General, has supported for a number of years a system of such observations at the principal military posts of the United States. The State of New York has carried on for a quarter of a century a similar system within her boundaries, and Pennsylvania, Massachusetts and Missouri have adopted a like liberal policy. The Smithsonian Institution has undertaken to collect and digest all the scattered observations which have been made on this continent, and also to establish a system of new stations in different parts of the United States. The Institution has also, within the past year, made an arrangement with the Patent Office by which the expense of the reduction and publication of the annual returns of the system, carried on under the former, will be partially borne by the latter. A full report of the observations made during the years 1854 and 1855 will be appended to the next report of the Patent Office, and the results of the materials

which have thus far accumulated in the office of the Institution will be gradually given to the public as the means for printing them are furnished.

The British Government is about to establish a system in its North American possessions; and this, with the co-operation of a few more States, of which Maine, from its position, would be one of the most important, will enable us to trace changes of climate and the progress of storms from the Gulf of Mexico to near the Arctic regions.

If any appropriation could be procured from the Legislature of your State for five or six sets of instruments I think reliable observers could be obtained, who would make the registration gratuitously or for a very small annual payment, say \$25 each.

The Instruments for each station would cost about \$75.

I am, very respectfully, your obedient servant.

JOSEPH HENRY,

Secretary Smithsonian Institute.

HON. LEXCEL WELLS, Portland, Maine.

SWEET POTATOES.

We are indebted to a friend from Giles county, who is known not only to be a scientific but a practical farmer, for the following mode of raising sweet potatoes, which he assures us is in all things preferable to any other mode now in use. Select the largest, smoothest and best shaped potato, and cut it crosswise into wheels half or three-quarters of an inch in thickness, taking care to have one, two, or three eyes on each wheel; open the hill, and place the wheel down into it edgewise some three or four inches deep, and cover. The consequence is, the wheel not only sends out roots that penetrate downward for sustenance, but sends out bearing roots more abundantly than slips, and the wheel itself grows to an enormous size, making an excellent keeping potato. This plan is equally adapted to any of the different kinds of potatoes now raised, especially the yam. Friends, try a few rows at least, and let us hear from you.

GENTILITY is neither in birth, wealth, manner nor fashion—but in the mind. A high sense of honor, a determination never to take a mean advantage of another, an adherence to truth, delicacy, and politeness towards those with whom we have dealings, are its essential characteristics.

To pronounce a man happy, simply because he is rich, is just about as absurd as to call a man healthy because he has enough to eat.

FRAUGLITY is good, if liberality be joined with it.

SALT FOR ANIMALS.

PROFESSOR SIMONDS, Veterinary Inspector of the Royal Agricultural Society, observes in relation to the action of salt on the animal economy, that "it is exceedingly beneficial in moderate quantities, but prejudicial in large ones." He thought horses might take with advantage from an ounce and a half to two ounces of salt daily, but that an excess of it would render animals weak, debilitated and unfit for exertion. Similar facts were also applicable to oxen, which accumulated flesh faster by the judicious use of salt than without it. He cited Arthur Young and Sir John Sinclair to show that salt had a tendency to prevent the rot in sheep. Professor Simonds added as his own opinion, that salt, by its action on the liver, and the supply of soda yielded to the bile, led to a greater amount of nutriment being derived from the food. The substance, he said, was also well known as a vermifuge, destroying many kinds of worms in the intestines of animals, and conferring a healthy tone of action, which prevented their reoccurrence.

Several members of the Royal Agricultural Society, as Col. Challoner and Mr. Fisher Hobbs, stated that their experience led them to agree with Professor Simonds in regard to the value of salt for animals. In reference to the mode of giving it, the practice of placing large lumps of rock salt in fields or yards, where it is accessible to the stock, was mentioned with approbation. The practice is now adopted by many farmers in this country, and, after several years' trial, is preferred to the former method of giving salt periodically. When animals are only allowed to have salt once or twice a week, it is sometimes the case that they eat too much at once; but by having it constantly within their reach, they eat such quantities as their system requires, and it assists the digestion and promotes health and thrift.

RULE FOR MEASURING CORN IN THE EAR.

MULTIPLY the length and breadth of the crib together, then multiply the product by the depth of corn, which will give the cubic feet of ears of corn; then divide that product by 12, and the quotient will be the number of barrels of shelled corn in the crib. If there be a remainder, it will be so many twelfths of a barrel of shelled corn.

WE earnestly recommend that farmers should experiment with new varieties of seeds, grasses, potatoes, fruit, hogs, cattle, sheep, and fowls: also with new kinds of farming implements, new machines and cultivators; for it is only by well conducted experiments and accurate comparison, (not guess work) that farmers can make safe and profitable agricul-

tural progress. But, at the time, beware of incurring risk, simply because a thing is new. Caution should be strongly developed in regard to new experiments.

RAISING POTATOES UNDER STRAW.

SEVERAL of our correspondents, within a year, have spoken favorably of the practice of planting potatoes and covering with straw, both as a less laborious and more profitable method of raising that crop. The idea is not new to us. As long ago as 1824, we saw this method practiced in Vermont, and it was reported highly successful, but for some reason it has not come into general use. The experiments we saw tried were by selecting a short pasture field, dropping the seed at suitable distances over the ground, and then covering the whole with a coating of straw to the depth of a foot or more. In the Fall the straw was raked off and the potatoes picked up, all dry. In wet seasons this plan was thought to be very effective. The editor of the Pike Co. (Ill.) Free Press has been presented with potatoes raised the last season by a Mr. Shipman of that vicinity, and details as follows:

Mr. Shipman informed us that he planted them in the usual manner, then covered them to the depth of about six inches with straw; after this no further cultivation was required—the straw kept down the weeds, and the potatoes were not disturbed until they were dug. Not only has this method produced him a very superior potatoe, but it has this year brought him an extraordinary yield—4 bushels to the square rod, or at the rate of 640 bushels to the acre.

He has tried this mode of culture for three years past, and has in every instance found it to bring results superior to the common method. This year he has planted at three different times, with the following results:

Early in April he planted Meshanocks in both ways, and Pinkeyes under the straw; all were in the same kind of ground. The Meshanocks cultivated yielded 2 bushels and 1 peck to the square rod; those covered with straw 3 bushels and 1 peck, and the Pinkeyes covered, 4 bushels.

Pinkeyes planted on the 24th of May, covered with straw, yielded 2½ bushels and 4 quarts to the square rod. They were the smallest potatoes.

Pinkeyes planted about the last of June, covered, brought 2 bushels and 1 quart to the square rod. These, although the smallest yield, were the largest potatoes, and of the best quality.

PLANTS, when drooping, are revived by a few grains of camphor.

FOURTH ANNUAL MEETING
OF THE
U. S. AGRICULTURAL SOCIETY.

The United States Agricultural Society met at Washington, in the East Room of the Smithsonian Institution, January 9. Although the severe storm, which had blocked up the roads at the North, prevented many delegates from reaching the city, there was a respectable attendance from various States and Territories.

Credentials were presented by gentlemen representing various State Boards of Agriculture, and State and county societies.

The President, Hon. Marshall P. Wilder, then delivered the following able

ADDRESS.

Gentlemen of the Society, and friends of Agriculture:—Official duty requires me to submit to you, on this fourth anniversary of our Association, a statement of its operations and progress for the past year, and to offer such recommendations as these may suggest in respect to its future mission. The year which has just completed its course has been one of unusual prosperity to the American farmer, in which a kind Providence has rewarded his toil with abundant harvests, with ready markets and remunerating prices. Among the secondary causes which have contributed to this result, we recognize the scarcity produced by the drought of the preceding year, and the demand for American produce created by the war in which many of the countries of Europe are still involved. As philanthropists and Christians we deplore this conflict, yet we cannot lose sight of the fact that it imparts to the agriculture of our country peculiar importance, and, should it continue, will afford an increased demand for the products of our soil. Still our main reliance must ever be upon the progress of society within our own borders, upon the prosperity of our industrial pursuits, and the consequent home consumption of our agricultural products. The commerce of one section of our republic with another, hardly second in importance to our foreign trade, is worthy of the attention and study of our political economists and the best of our statesmen; and this commerce is created and sustained by the art which it is the object of our association especially to promote.

Gentlemen, I congratulate you on the progress of our institution during the past year. If it has accomplished all which we anticipated, it has furnished pleasing evidence of its growing pros-

perity and usefulness, and strengthened our hopes in regard to its future development.

* * * * *

The arrangements for the Boston exhibition were on a most liberal scale, and so perfectly systematized as to be easily controlled, and to contribute to the comfort and happiness of the multitude in attendance.

The number of entries in all the departments was nine hundred and thirty-one, embracing between one thousand and fifteen hundred animals. The sum awarded in premiums alone was nearly twelve thousand dollars, a larger amount than has ever before been distributed by any other Agricultural Society in our country. The other incidental expenses were very large; yet all these, as will appear from the Treasurer's report, were more than covered by the receipts, leaving a balance to be added to the funds of the Society. This balance would have probably exceeded ten thousand dollars, but for the severity of a storm which entirely suspended the exercises of the occasion, during the 24th inst.

The experience of the last year confirms the opinion before expressed in favor of holding annual exhibitions in different sections of the country, as a means of establishing the reputation of the Society, and of promoting personal acquaintance and practical knowledge, among the most intelligent farmers of our land.

The utility is becoming more and more manifest every year, combining the most healthful recreation of the people, and verifying the remark of Daniel Webster, at the first exhibition of the Norfolk Society in Massachusetts: "The great practical truth and characteristic of the present generation is, that public improvements are brought about by voluntary association and combination. The principle of association—the practice of bringing men together for the same general object, pursuing the same general end, and uniting their intellectual and physical efforts to that purpose, is a great improvement in our age. And the reason is obvious. Here men meet together that they may converse with one another—that they may compare with each other their experience, and thus keep up a constant communication. In this practical point of view, these Fairs are of great importance. Conversation, intercourse with other minds, is the general source of knowledge. Books do something. But it is conversation—it is the meeting of men face to face, and talking over what they have in common interest—it is this intercourse that makes men sharp, intelligent, rea-

dy to communicate to others, and ready to receive instruction from them."

I, therefore, recommend to your particular attention any application which may be made in reference to future exhibitions of the society. As the fact is now well established that the exhibitions of the national society in every State advance rather than retard the progress of the local associations within its bounds, such applications may be expected to multiply, and it is worthy of your inquiry whether any additional action of our body is necessary on this subject.

* * * * *

I have the pleasure to inform you, that invitations have been extended to several gentlemen of distinction to deliver lectures before this association during our session. I would, also, recommend that as much time as possible be allotted to the free discussion of agricultural subjects, with a view to elicit the results of experience in different parts of our Union.

It will be remembered that such a course, at our last annual meeting, led to an interesting debate on the relation of political economy to American agriculture. One of the gentlemen who took a prominent part in that discussion, and whose powerful argument is published in the transactions of this Society, has finished his labors on earth, and entered into his rest. Chauncey P. Holcomb, Esq., one of the founders, and a Vice President of the Association, died at his residence, soon after our last meeting. He was one of the most distinguished farmers of Delaware, and of this Republic;—of clear and discriminating mind, thoroughly conversant with the science and practice of agriculture, and one of its ablest defenders and warmest friends. His private virtues and public services will perpetuate his name and his memory in the hearts of his countrymen. Of other members, who have deceased during the year, we cannot speak particularly, with the exception of Thomas Hancock, Esq., of New Jersey, who was present at our last meeting, and took part in its exercises, and who, like Mr. Holcomb, entered the spirit world soon after his return from this city. With both of these gentlemen it has been my privilege to be long associated, for the promotion of the rural arts; and I am happy to bear testimony to their integrity of character, and to their zeal and fidelity in the cause of terraculture. Here, beneath this roof, where they mingled their thoughts and joined their efforts with ours, it is pleasant to speak of their merit, and to record their worthy deeds.

But, gentlemen, while individuals die, associations and institutions survive. It is not, ordinarily, the privilege of those who start any great enterprise, to witness its consummation. One generation prepares work for the next. We are carrying out the designs of our fathers, and realizing the results for which they labored. Our national institution is but the partial development of ideas cherished by the immortal Washington. In his letter of July 20, 1794, to Sir John Sinclair, he says: "It will be some time, I fear, before an agricultural society, with Congressional aids, will be established in this country. We must walk, as other countries have done, before we can run.—Smaller societies must prepare the way for greater; but, with the lights before us, I hope we shall not be so slow in maturation as other nations have been."

What the farmer of Mount Vernon, more than half a century ago, desired, we have undertaken; but others must carry on and perfect them. Local associations have been formed in towns and counties, in States and Territories of the Union; and these, as he anticipated, have opened the way for our national organization.

The United States Agricultural Society is now an established institution. It is in successful operation, receiving the confidence, patronage and favor of the public; and, in return, it is co-operating with local associations, and dispensing its bounties for the encouragement of individual enterprise and merit. The encouragement thus afforded to American agriculture, and the improvement therein, have helped to till and put under profitable cultivation the immense prairies of the West and the alluvial soils on the banks of our vast rivers—to reclaim thousands of acres of waste land in populous districts, and to restore the exhausted soils of the older States. They have thus increased, many fold, the value of our land, the amount of our agricultural products, and have preserved us from the bankruptcy and ruin, too often consequent upon an excess of trade, or an influx of the precious metals. They have created and sustained trade, spread the sails of a prosperous commerce, and saved us from commercial embarrassment which would otherwise have been as prolonged as those of former years. They have also maintained an equilibrium among all branches of American industry. They have developed, in a remarkable degree, the conservative and progressive elements of the American system, and have taught us that we can safely depend upon our own resources, and become, in the noblest sense,

free and independent. Already our American farm extends from the Atlantic to the Pacific, and it is only a question of time when it shall be bounded on the North by the Arctic, and shall terminate on the South at Cape Horn.

Gentlemen, I have cordially co-operated with you in the inception, organization and progress of the society to the present time, and, in future, I shall be ever ready and willing to contribute to its advancement according to my ability. But I have not the presumption to believe that I possess such qualifications for its presiding officer as to entitle me any longer to the honors of that office. So far as its responsibilities are concerned, I claim to have borne my full share of them, and it is my desire to resign the presidency, and to aid in installing some one of the many gentlemen whom I see around me, better qualified to sustain these responsibilities and more worthy of this high trust. To you, my fellow associates, who have borne with me the heat and burden of the day, I tender my heart felt acknowledgments for your cordial support and confidence; and I beg to assure you all of my continued interest in our association, and of my affectionate and high regard for you personally.

Gentlemen, while we review with unfeigned pleasure the extension of our agricultural domain—the advances of improvement in the arts of husbandry—the increase of the products of our soil—the interest manifested everywhere in the objects which we seek to promote—the contributions which wealth and science are continually making for the advancement of this cause, and the numberless other proofs of progress which encourage and cheer us in our noble work, yet let us remember that the prosperity of our association must ever depend upon the untiring energy and perseverance of its members. We rejoice that it is so, for activity is the life, health and triumph of enterprise.—To no people on the face of the earth is this more applicable than to the farmers of the United States of America, where every man is the arbiter of his own fortune.

What a cheering prospect is before the American yeomanry! What a destiny awaits them!—one in all the rights and privileges of a common citizenship—the conservators of a common country—the almoners of Heaven's bounty to the reduplicating millions of our population. Bound together by a chord of living sympathy, they are, and ever must be, the guardians of the public weal; and the power that would paralyze their arm destroys the last refuge of our nation's hope.

"Princes and lords may flourish or may fade;
A breath can make them, as a breath has made,
But a bold yeomanry, our country's pride,
When once destroyed, can never be supplied."

Success, therefore, my brethren, to the American farmer!

From the New England Farmer.

GOOD AND BAD FARMING.

BY JOHN GOLDSBURY.

WHOEVER has traveled much, in any part of our country, whether North or South, East or West, cannot have failed to notice the different appearance of different farms with regard to neatness, economy and thrift. On one farm, everything is in good order, and appears neat and tidy. The buildings are all in good repair, and the yards, about the house and barn, look as though they had just been swept and garnished; no litter, or lumber of any kind, is to be seen about the establishment. "There is a place for everything, and everything is in its place." Everything on or about this farm, betokens neatness, economy and thrift. On another farm, how altered is the scene! Here, everything looks as though a hurricane had swept over the place, scattering litter, rails and lumber in every direction. The house, and barn, and fences, appear in a dilapidated state; and all the yards about the establishment are filled with broken-down carts and carriages, plows and harrows, wheelbarrows and ox-yokes, and implements of husbandry of every description. Everything on or about this farm, indicates a want of taste, neatness, economy and thrift.

The same is observable with regard to towns.—Go into one town, where considerable attention has been paid to agriculture, as a science—a town not remarkably distinguished for the richness and fertility of its soil, or the care with which it may be cultivated—being rather a poor, hard and rocky soil, and there you will behold comfortable, convenient and well-built farm houses and well filled barns, cultivated fields and fruitful orchards, good walls and fences, large stocks of cattle, horses, sheep, swine, &c., and everything indicating the taste, neatness, economy, industry and thrift of the farmers. Go into another town, in which little or no attention has been given to the cultivation of the earth—a town possessing all the natural advantages of a fertile, well-watered and exuberant soil, and of a favorable location and mild climate—and there you will behold a scene, which, if I,

do not make you "stare like a cat in a strange garret," will, at least, induce you to quit the town as quick as possible, lest the contagious influence of such a scene should overshadow your spirit with gloom. For, as you cast your eyes about you, and behold the miserable prospect on every side,—houses, barns, and other buildings, grown old and going to decay, fields covered with weeds, brambles, briars, thorns, and thistles—as you behold all this, you will be convinced, that some blighting, withering curse must have fallen upon the inhabitants of that town, and paralyzed all their energies. Otherwise, why have they neglected to cultivate and improve their lands, to repair their rusty old buildings, and to repair their broken-down fences? In order to account for such negligence on their part, one would be inclined to think that they must have been the worshippers of Bacchus, or of the drowsy god Somnus.

Having taken a comparative view of the condition of different farms in the same town, and of whole towns under different cultivation, let us now endeavor to arrive at some just estimate of their comparative values. Everything is said to be worth what it will bring in the market. Whether or not the market price be the true standard value of everything, it is not necessary for us to determine. The value of a farm, all other things being equal, should be estimated by the abundance, variety and richness of its productions, and by the facility and ease with which it can be carried on.

A farm, which is made to produce twice the amount of productions, with the same labor and expense bestowed upon another, is certainly, for all practical purposes, worth twice as much money, though it may not bring twice as much in the market. The same is true with regard to a farm, on which the owner is obliged to skim over twice the number of acres, and perform double the amount of labor, in order to obtain the same amount of crop. It is cheaper—it is easier—it requires less labor to cultivate a few acres and cultivate them well, than to attempt to cultivate a large number, and do it imperfectly. We see, then, that the highly cultivated farm is the most valuable and productive farm, and will generally bring the most in the market. It is skilful, practical and scientific agriculture, which renders a farm truly valuable and productive.

The same is true with regard to towns which are made up of the different farms contained therein. Every town is to be estimated according to its productiveness; and this depends, in a great measure, upon the degree of the attention which

has been paid to agriculture. No matter how a town stands on the State valuation list, its real value depends upon its resources—its ability to produce all the necessities, the comforts, the conveniences, and the luxuries of life; and these depend, in a great measure, upon the knowledge and practical skill of its cultivators. A town, in which the science of agriculture has never been developed, cannot vie with another, in which art and science and persevering effort, have, for a long series of years, been carrying forward the great work of improvement. The river does not gush up at once in full tide from the ground; but it commences in a thousand springs, whose waters flow on and mingle until they become a flood, when the ships float and the sea monsters play. The sun does not rise up instantly, deluging the earth with a sudden burst of light; but faintly, at first, his rays tinge the eastern horizon; and while the shadows of the dark night are still upon the earth, higher and still higher mounts the sun, until at last his broad light is poured in full splendor upon the world, and it is day. So it is with the science of agriculture. Its beginnings are small; but it increases as it advances, till it finally changes the whole aspect of a town.

THE MERCHANT'S CLERK AND THE PLOWBOY.—

The young man who leaves the farm-field for the merchant's desk or the lawyer's or doctor's office, thinking to dignify or ennoble his toil, makes a sad mistake. He passes, by that step, from independence to vassalage. He barters a natural for an artificial pursuit, and he must be the slave of the caprice of customers and the chicanery of trade, either to support himself or to acquire fortune.—The more artificial a man's pursuit, the more debasing is it morally and physically. To test it, contrast the merchant's clerk with the plowboy.—The former may have the most exterior polish, but the latter, under his rough outside, possesses the truer stamman. He is the freer, franker, happier, and nobler man. Would that young men might judge of the dignity of labor by its usefulness and manliness, rather than by the superficial glosses it wears. Therefore, we never see a man's nobility in his kid gloves and toilet adornments, but in that sinewy arm, whose outline, browned by the sun, betoken a hardy, honest toil, under whose farmer's or mechanic's vest a kingliest heart may beat.—*Hunt's Magazine.*

"Flowers beginning to fade, can be restored by putting the stems in scalding water." (7)

From the New England Farmer. HOW TO RAISE FOREIGN GRAPES UNDER GLASS.

MR. EDITOR: My information on the subject of raising foreign grapes under glass, has been derived from observation, the reading of some publications on grape culture, and the experience I have gained by experimenting upon their suggestions. In the first place I will give you the plan of my vinery, and the preparation of the border. The vinery is 34 feet long by 16 wide; the sills are placed upon seven brick piers on a side, rising three feet above the ground, with a span roof, running north and south. The sides are boarded with matched boards up to the sills, and the ends the same on each side of the doors. The rafters are 12 feet long. The sashes two lengths, three of the top ones on the west side slide over the bottom. The ends are also of glass, above the ceiling, three feet from the ground. There are two ventilators about six feet long and eight inches wide, on each side under the sills, which open and shut, and a door at the centre of the north and south ends, all of which can be opened to admit air when necessary.

I have a hydrant at one end of the building, under which I keep a barrel of water standing, and a hose, by which I can water the border and sprinkle the vines in a short time. The border is the length of the building, and 19 feet wide on each side of the walk, which extends through the centre of the house; being 7 feet inside and 12 outside of the building. The soil was removed two and a half feet in depth. The bottom was filled about six inches with oyster shells and small round stones, to prevent the roots from soaking on a wet bottom. The turfs taken from the top of the ground were laid on the shells and stones, then a laying of compost, and then a laying of bones from the slaughter house, mostly cattle's heads, and filled up with a mixture of loam, muck, leached ashes, scraps of old leather, lime, rubbish, bones and manure, raising it about six inches above the ground. As it was placed on a gravelly foundation, I have thought a drain to take off the water unnecessary. Downing says of grape culture, respecting the soil, that "it should be dry and light, deep and rich." Dead carcasses, which are recommended by some writers, I think entirely unnecessary. The cost of the building and border was about four hundred dollars.

The beginning of April, 1853, I planted 24 grape vines, 12 on each side, which I had of Parsons & Co., of Flushing, L. I. There were 11 va-

rieties, but mostly black Hamburg. The roots were well spread out, just outside of the building, and covered with about three inches of soil, and the vines brought in under the ceiling to the inside, and tied to the wires about ten inches from the glass, after the buds began to push. It being important to keep the house and border moist the first part of the season, the inside was watered three or four times a week, and the vines sprinkled almost every day, and the outside was watered near the roots with soap suds once a week. The most of the vines reached the top of the vinery by the middle of August. The house was opened as the heat began to increase, and shut before sunset. The thermometer, when the weather would allow, was kept between 70° and 80°, and not over 90°, unless the temperature without was higher.—After the first of September, I watered but seldom. The first of December I cut back the cane to within four feet of the ground, and laid them down inside and covered with tan bark. The 2d year 1854, I uncovered the vines the 10th of April, and opened the house as the season would allow, and after the buds began to push, tied them to the wires.—About the first of June they began to show fruit. I pinched off the most of them, and did not allow over three bunches to grow on a vine the first year of bearing, and not more than one cluster on a spur. Watering the border was continued three or four times a week in the morning, but sprinkling the vines was discontinued while the fruit was in blossom. When the fruit was formed, I pinched off the end of the spur an inch beyond the first leaf above the bunch, and kept all the laterals back to within about 12 inches of the cane. When the fruit became the size of a pea, I commenced thinning them out with a pair of sharp pointed scissors, taking the smallest ones first. This was done twice in the course of two or three weeks, taking about one half of the number. The first of July and the first of August, I sprinkled two pounds of sulphur each time on the ground in the middle of the day to prevent mildew. When the vines reached the top of the vinery, they were pinched off, but two or three laterals were left to grow a few weeks longer to prevent the buds from bursting. There were about fifty bunches, weighing from ten ounces to one pound. One vine, the Syrian, had three bunches weighing from two and a half to three pounds, and some few of the black Hamburgs, over one pound. In seventeen months from the time of planting, some of the bunches were ripe. In the fall I covered the outside border with manure about ten inches thick, to prevent

the roots from freezing, and to enrich the border for the next year. The first of December, I cut them off to within eight feet of the ground, washed them with a coat of soft soap and sulphur, laid them down as last year and covered with tan bark.

The third year, 1855. As the season advanced, I opened the house on hot days, and as the season was late, did not uncover the vines until the 18th of April. I washed them with soap suds, and when the buds began to push, tied them to the wires. The whole border was forked up after removing the manure from the outside, and the inside watered thoroughly from the hydrant and hose, so as to penetrate the depth of the border. It had not been watered for the previous six months. A similar course in the cultivation was pursued as the previous year in regard to watering, airing, thinning out, cutting back the spurs, and stopping when they reached the top of the house, leaving two or three laterals to grow a few weeks longer. Sulphur was scattered over the ground twice as the previous year. I allowed from seven to ten bunches to grow on a vine, but only one on a spur, and had about two hundred bunches of good and well ripened fruit. I commenced picking the 15th of September, and have had them till the present time, 29th of November. The black Hamburgh, Royal Muscadine and White Sweet Water have been heavier than last year, some of them weighing from 14 to 20 ounces. The Syrian, on which were seven bunches, weighed from 1½ to 2 pounds each. The danger of overtasking the vines compelled me, though with reluctance, to pluck off more than one-half of the clusters after they had formed and appeared as likely to ripen as well as the others. The result was, the remaining bunches ripened perfectly, and the vines appear in good condition for another year.

I have thus given you my method of raising foreign grapes, and I should like to have others make the trial for themselves, and prove more successful than I have been. It has taken my personal attention an hour or two almost every day, and in thinning them out it took two or three whole days. The rich fruit obtained the premium of the Horticultural and Agricultural Societies, yet of itself has amply compensated me for the trouble and expense. Any one who has a taste for the work, and can spend the time, will find it a pleasant, if not a profitable pursuit; but if he depends on others, unless he has a skillful gardener, will probably meet with but little success. ORIN SAGE.

Ware, Nov. 20th, 1855.

From the Homestead.

FOREIGN CORRESPONDENCE.

EXETER, ENGLAND, Feb. 16, 1856.

MESSRS. EDITORS:—I designed to fulfill my promises to you in regard to certain questions of stock breeding in our State, which were undergoing discussion when I left. But a sudden call abroad, and prolonged absence, put it quite out of my power. I will however endeavor to supply the place of an article on that subject, by a letter on general subjects connected with agriculture on this side the Atlantic. I am, as you discover by my date, in one of the best grazing districts in England, or if not that, in one of the fancy stock-breeding districts; and I have never before been so much gratified by sight-seeing, although I have been favored both in London and Paris. The season of the year is of course unfavorable for examining growing crops, but this is the special season for improvements, that is, in underdraining and collecting materials for the compost heap, preparatory to the opening spring. There are but few days in the year that the earth cannot be easily moved, and at present all the laborers that can be spared from the barn are engaged in laying tile, and hauling headlands to the compost heap, or carting the rich earth from the low lands and road sides, to the higher and poorer grounds, taking care as much as possible that the earth containing weed seeds is put in the heap, that during fermentation the germ shall be destroyed. Here I think the farmers of America can learn as much as in any other department of agriculture; and although we need better culture, more thorough underdraining, and a better husbanding of manures, my own impression is that we suffer as much from the weeds growing in fences, highways and waste lands, as from any other cause. No one in Connecticut can have given any attention to the subject, but will be constrained to feel that there are seeds enough sown from this cause every year to keep at least one half of the laborers busy to eradicate the weeds the following season, and had I been able to attend the Annual Meeting of our Society, I should have proposed a committee of examination, and a premium connected with this subject, and would now suggest that you engage some able pen to discuss it in *The Homestead*.

While the subject of underdraining is with us much discussed, and to some little extent practiced, irrigation in connection, is little thought of;—in this country the two go hand in hand, where it is possible, and almost all the mowing lots are

those underdrained and irrigated, and the fields at this time are as green as ours at the first of May, and although we cannot begin as early, our hill country is particularly well adapted to it. We may not be able to bestow as much time on each acre of ground as is done here, but we have vastly greater inducements; for with us, in almost every instance we own the land in fee; while in Devonshire there is scarcely a man, that can be called a farmer, that is not a "tenant at will," and if he makes improvements his landlord raises his rent, and he has in a sense to pay for the improvements he has made; and yet I apprehend there are few districts as hilly that are as well improved, indeed I am told that they cannot live except they keep up these improvements. There are many men here that are renting say three or four farms of from two to five hundred acres each, often separated at five and even ten miles distance, and yet if one may judge by the waste or head-lands and the present appearance of the road-sides, there are not as many weeds grown for seed on the entire properties as we often find on one hundred rods of road-side adjoining some farms in Connecticut, and of those too who present their farms for premiums.

There is, however, one thing in which I am disappointed, and it is not confined to this district; and this is the shallow plowing, for I think most persons in speaking of the tillage of this country, have indicated, at least, that the soil is made rich by tilling much deeper than we do, which certainly is not the case. I have visited quite a number of the best districts, and have not heard one person advocate deep plowing for wheat, nor indeed for any crop except for roots. They all insist on very thorough pulverization of the soil, and an entire absence of weeds, even to the weeding of the wheat crop. Allowing for the difference of climate, may we not take this hint, and while we plow deep to avoid drouth, ought we not to use more implements for disintegrating? For we often hear of the large yield of wheat per acre on English land, and yet I am quite sure the grain is vastly inferior to ours in the fulness of the kernel; it is much of it what we call shrunken grain, and still the yield is quite commonly forty bushels to the acre. I would suggest to the readers of *The Homestead* a trial in the same field of double the amount of labor in pulverizing, and give us the result, not only on wheat but on all field crops;—and perhaps if we find an advantage in it, some of our enterprising mechanic farmers may set their wits to work in our behalf, and give us machines that will do the work, without greatly enhancing

the cost. I had intended to say a word on the breeding of stock in Devonshire, and also of sheep, but will leave that for a future letter.

Yours, very truly,

R. LINSLEY.

HOW TO GET EARLY POTATOES.

It is very desirable to have a supply for the family, by the fourth of July, and if we are cultivating this crop for market, it is far more profitable to have them early than late. Three weeks time gained in the market may make a difference of one hundred dollars in the receipts from an acre of ground. The profits of market gardening depend very much upon early vegetables.

An early variety of potatoes is of course indispensable. There is at least six weeks difference in the time of their maturity. Indeed some varieties seem to require the whole season, and keep on growing until the frost kills the vines. Others grow rapidly, and are ready for the table in about ninety days from the time of planting. The *Merceer* is quite early, and were it not for its liability to rot, would answer very well for this purpose.—But there are other varieties at least two weeks before it in ripening, and nearly equal in quality.—If possible, get these for the experiment. If you have a hot-bed, you may split the potatoes lengthwise, and lay them upon the bed in rows as thick as you can place them, and cover them with about two inches of mould. In three weeks they will be well up, and furnished with roots several inches in length. They can be set out early in April as you would set out a cabbage plant. They should be taken up carefully from the hot-bed and the plants separated by hand. There will not be a full yield by this method, but they will mature about three weeks before the same variety planted in the open ground.

If you have no hot-bed, and will not take the trouble to make one, you can put a barrel or two of potatoes by the kitchen fire or in any warm place about the 1st of March. The eyes will immediately begin to start and roots will soon form. If they are moistened with a little water occasionally, the process will be hastened. As soon as the ground is sufficiently open, take them carefully from the barrel and plant them. They should not be left until the roots are matted together, lest they be broken. This will hasten the ripening of potatoes several days.

In securing early potatoes something depends upon the aspect of the ground, and its treatment before and after planting. A piece of ground

with a slope to the south or south-east, is most desirable for early crops. The sun's rays fall upon it more directly, and the temperature is several degrees higher from this cause. To secure the best results, this southern slope should be trenched two spits deep at least, and well manured with horse dung fresh from the stable. The trenching will carry off all superfluous water from the surface, and thus increase the heat of the soil. The manure in its fermentation will still further raise the temperature, and push forward the process of vegetation. Thus there are four sources of accelerated growth to the plant—the sprouting, the more direct rays of the sun, the draining caused by trenching, and the extra heat of the manure. The potatoes should have frequent hoeing until a month before digging. They will not be quite so early as those transplanted from the hot-bed, but will reach maturity soon enough to pay for the extra labor. If you wish for early potatoes, make your preparations now.—*American Agriculturist*.

From the New England Farmer.
ON RAISING STOCK.

HAVING had considerable experience in the raising of stock, I wish to state through the columns of the Farmer, a few facts connected with it.—There is a mistaken idea prevalent among many farmers, that if a creature is fed high while young it will naturally be tender, and must so be fed through life to be kept in good condition. A thing that is worth doing at all, is worth well doing; if farmers would have fine, well proportioned cattle, they must be well cared for during their first years, and this is the main point; if a calf is kept growing all of the time the first year, the probability is that it will make a fine creature, if it have enough even of poor hay to eat. My method of raising calves is this: let them suck one-half the cow gives for four or five weeks, keeping fine hay before them and giving them once a day, a handful of meal or oats, or a few crusts of bread soaked in water, then learn them to drink porridge made of skim milk and buckwheat flour, or meal that has been sifted. In this way they seldom scour at all; and if one does, I take a little white pine charcoal, finely pulverized, and mixed with lard enough to make it adhere, spread this mixture on a piece of bread, and give it, which is a certain cure. I feed in this way until they are three months old, when they will do to wean. A few oats should be given once a day a while longer. During the first winter they should be kept in a warm stable, and have all the

good hay they will eat; after this they will grow well and keep in good condition on meadow hay. In this way it is no uncommon thing for my three old steers to weigh 3,000 pounds.

And what is true of calves, is true of colts in a greater degree, as it is the symmetry of form, and gracefulness of movement in the horse, in which consists his highest value. If the colt is allowed to become stunted while young, all the high keeping that can be given in after life never can restore that which he has lost. I have known a man who wished to raise up a tough horse for his own use, who kept his colt in an open shed, with nothing but poor hay to eat, and it was tough indeed;—tough to look at, tough to drive, and a sorry looking thing altogether. A colt should be kept in a warm stable, with plenty of good hay, a pint of oats and a pint of sliced carrots a day, during the first winter; and here I would say, that I consider grooming of as much importance as good keeping; farmers, as a general thing, pay too little attention to this; a good rubbing from head to foot, once a day, is worth as much to a horse as two quarts of oats. If farmers would keep three things in view, in regard to young animals, we should soon see a great improvement in the stock of New England, which are these—feed, feed well, feed high.

West Brookfield, 1856.

TREES FROM SEED.—“A few years ago we made a large collection of the seeds of shade and ornamental trees, both deciduous and evergreen, and planted with much care, but did not get a seed to vegetate. This season we have found out what was the matter; we planted too deep. It is well known that in the pine regions of Georgia, this has been a great mast year, and we now find everywhere where the winged seeds have met the surface soil, they have thrown out roots, and begun the form of a tree. They had no planting but what nature gave them, and dame nature is a tolerable horticulturist. We invariably plant tree seeds; just soil enough to preserve the moisture is all that is necessary. An ornamental tree, grown from seed, may be made anything the cultivator wishes it. A fruit tree grown by seed is most likely to be healthy, and may prove a sure and valuable variety. A man may have a forest or an orchard from seed, if he will. Even the acorn and hickory nut may be planted with profit.—Plant tree seeds, reader, and you will be astonished at the work of your hands in a few years.—

Exchange.

DAVIDSON COUNTY, N. C., April, 1856.

MR. EDITOR—*Dear Sir*:—The Arator has been coming to me the past twelve months, ordered by a friend, and continues coming, which I take from the office and read with interest, and do cheerfully pay the dollar herewith enclosed for the present year, favoring the circulation of useful information.

The publication of the Arator is not only calculated to stimulate the farmer, but impart to him useful knowledge in the art of agriculture from actual experience. The enlargement of the farmer's understanding with stimulents added thereto, will operate to elevate and strengthen the source from whence the population of all mercantile, manufacturing or manual operations are sustained. As the product of the earth is the support of all with the blessing of divine Providence, which is not only to be desired but sought after and looked for through deeds of righteousness which exalteth a nation, and draws down divine approbation and protection, all men having charity towards all classes of human beings possessed of a human soul, and also being kind to the brute creation, hence a blessing. Such measures as we mete out to others shall be measured to us again. All are dependent upon the farmer for their own support—for the support of their establishments, including all callings, speculations and occupations, varied as they may be. Thus we may look upon the farmer as the man most safely, most happily and most honorably situated. And well would it be, if more of the noble sons of our favored clime, were thus honorably engaged. We need legislators, we need some lawyers and some physicians also; but we cannot redeem our haggard old state with these professions alone. But if we expect to increase our wealth and elevate our standing, we must labor as farmers to renovate and bring into profitable cultivation our worn-out or poor lands, and look upon farming as the sure source of the prosperity and wealth of the world. Therefore, let every worthy occupant train his sons to manual labor, and thus honor the calling. It is to our every interest to honor and elevate the farmer, to have an eye to his interest and legislate for his advancement. When the farmers prosper all prosper. We know the callings of industry are nearly connected as members of the same body; but the farmer is like unto the head—cut off a limb it cripples, cut off the head it perishes.

I have but little to tell in relation to my own farming operations. I am a tanner by trade, but have for the last few years been engaged in building roads somewhat as a duty, it being convenient to me.

The way I managed my sweet potato ground last spring, I had it broken, then opened a furrow pretty

deep, put stable manure in it, made a ridge over the manure, then planted sprouts nine or ten inches apart—had excellent potatoes with but little cost or trouble. Manuring this way, the manure is not exposed to the sun and is not hoed out in tending, as is the case when spread over the ground. I had them plowed twice, scraped them down first time and hilled them up second plowing. This was about all the tending. It may be, many plant the same way; it is the first time with me.

Our neighborhood is stocked with noble fellows, but like the soil, some lacking in the culture. We need more useful information in relation to the cultivation of the soil. If this was imparted to us, we surely would improve in farming—having the railroad within our reach to stimulate with a good market, the results of that noble enterprise. And thus, with more useful information, there may be a hope, that most of our bad luck that so much is charged to, will begin to run to good luck, by changing our poor calves and cows from buzzard meat in the spring, to fat beef in the market to bring the cash in. As most of our bad luck may be traced to bad culture, bad management or strong drink, then let us labor to improve the culture, manage better, and entirely abstain from strong drink, and we shall be apt to prosper.

I have thus let my pen unceremoniously run, without forethought of writing only a little about the reception of the Arator and the dollar.

Your friend, D. O. MOFFITT.

HORSES.

Those who have the care of horses are frequently very negligent in the manner of discharging their duty. There is no animal in existence so susceptible to the effects of dirt, impure air, bad bedding, &c., as the horse. All excrements in a horse's stable, however small in quantity, should be removed at least once a day, and a clean, dry place left for the animal to stand, or lie down upon. Many a horse when stabled for an hour's feeding, is placed in a close, filthy place, without a breath of pure air—there obliged to make his meal. We would almost as soon think of eating in such a place ourselves, as of compelling a horse to do it. If you have no windows in your stable, by all means make one at once, or knock off a board, to let in light and pure air. When you have removed the droppings from the stable at night, strew the floor with dry straw or muck;—the value of the manure will more than repay the expense—besides rendering your horse healthier.

What is it you must keep after you have given it to another? Your word.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., MAY, 1856.

From the Editor, dated Texas, March 14, 1855.

EDITORIAL CORRESPONDENCE.

WE have visited Texas to see some of our relations who reside in these out-of-the way regions, as well as to satisfy ourself concerning some things of which we have heard; and being already well convinced that this is no place for a North Carolinian who is comfortably getting along in the good old State, we now, in this far-off country, take an early opportunity to advise the good people of "our own, our native land," who have had their heads turned by reports of rich lands and cotton bales in the "bottoms" and "prairies" of Texas, to dismiss their longings for these attractions, content themselves to remain where Providence has cast their lot, go resolutely and cheerfully to work, resolved to improve their individual heritage and advance the general welfare; and we can promise them more certain prosperity and happiness in North Carolina, than they would ever realize in Texas. We shall take occasion, at our earliest convenience, to give our reasons for this opinion, which, we think, cannot fail to conduct our readers, generally, to the same conclusion.

But here, let it be distinctly understood, to succeed and maintain independence and contentment in North Carolina, our agriculturists must go on vigorously and systematically in the work of improving their lands and their modes of cultivation. Steady perseverance for a few years, in judicious manuring and cropping, are necessary to place our farmers and planters in a state of individual independence, in the midst of the best society and most salubrious and delightful climate on the globe; and the completion of a liberal and wise system of internal improvements, is equally essential to our commercial independence, and cannot fail to elevate the State to a proud and enviable position among the most populous and opulent States of the Union.

We have long since put our heart and mind and hand to these great works; and we now feel more determined than ever to prosecute our part to the end in the mighty revolution which patriotism and science are effecting in North Carolina.

Our periodical, the ARATOR, bears an humble but important part in this work. It is acknowledged by

our most intelligent and skilful farmers to be useful in its sphere; but the extent of its usefulness depends upon the extent of its circulation—in truth, its very existence depends upon the liberality and patronage of the public. We, therefore, earnestly and respectfully call upon the friends of improvement in North Carolina to go generously to work and get up a paying subscription for the work, that will place it upon a solid basis, and give living remuneration to the labors of its Editor. Let them, in every county and every neighborhood, proceed forthwith to call upon their neighbors, get their names and the amount of their subscriptions, and forward the same to the Editor, at Raleigh, in time to meet him on his return, in 6 or 8 weeks, to his post.

AN AMERICAN TRIUMPH IN EUROPE.

THE United States contributions to the great exhibition in Paris have not made much show, but, on being put to the test, it seems that they are of a very valuable character. The New York Tribune gives the subjoined account of the trials of the machines for threshing, reaping and mowing:

The net results of a half hour's earnest work by the rival threshers, and by six men with flails, (estimated as a force equal to one of the machines,) is as follows:

Six threshers with flails	60 litres of Wheat.
Pitt's American thresher	740 " "
Clayton's English " "	410 " "
Dunoir's French " "	250 " "
Pitt's Belgian " "	150 " "

[The French litre is a little less than a quart: 36 litres make a bushel, very nearly.]

Assuming, in the absence of data, that these machines are of equal cost and work with equal force, and that the average expense of threshing and winnowing of wheat in the old way is ten cents per bushel, the Belgian thresher reduces this to about four cents per bushel, the French to three, the English to two, the American to barely more than *one cent* per bushel, or one-tenth of the cost of flail-threshing in the old way. This year's crop of wheat, rye and buckwheat in the United States can hardly fall below 200,000,000 bushels, which could only be separated from the straw and the chaff in the old way at a cost of \$20,000,000. The Belgian thresher, if in common use, would reduce this to \$8,000,000, the French to \$6,000,000, the English to \$4,000,000 and the American to some \$2,500,000—a clear national saving of \$17,500,000 per annum in the cost of threshing and winnowing our small grain alone. And the saving to France from the substitution of Pitt's thresher for the best of her own invention can hardly be less than ten millions of dollars per annum.

So with regard to reapers. The time for cutting equal portions of heavy and badly lodged wheat by the several European machines, ranged from half an hour to an hour and a half, while the three American machines cut an equal area as follows:—

Hussey's, (with Wright's improvement,) in 18 minutes.

Manny's (an Illinois machine,) in 16 minutes.

McCormick's (operated by McKenzie,) in 10½ minutes.

We venture to say that this last was the quickest time ever made in cutting grain, even though we assume that the area cut was not more than two-thirds of an acre. And, without at all detracting from the merits of the victorious machine, we believe a share of the credit is due to J. C. McKenzie—a thorough Yankee who won the triumph for McCormick in England, at Meehi's farm, in 1851—and who as a manager and operator of this class of machinery, has no superior. There are probably not five men living who could have raked into sheaf-armsfuls of the unprecedented speed of McCormick's reaper in the recent trial.

It thus appears that, in the public official testing of both reaping and threshing machines, open to all the world, and in which all the machines of Europe must necessarily have been represented, *every American machine entered proved immensely superior to every European machine.* That is to say, of our four reaping and threshing machines sent to Paris to compete with the thirty or forty machines of Europe, each one of our four proved superior to the best rival machines that Europe could produce! So complete a national triumph was never before achieved in any wide area of industrial competition.

ANIMAL MANURES.

The dung of poultry will be first considered. Most farmers may not keep enough to render it an object to provide poultry houses, with conveniences to save their excrements. It is believed, nevertheless, that the subject is of more importance than generally supposed. If the quantity obtained is small, it is powerful enough, as a fertilizer, to merit attention. The author has been able to collect from twenty to thirty bushels annually, without any particular effort. This he has used in his garden for onions, melons, carrots, and, indeed, for whatever grows in the garden; and the increase of his crops has been a sufficient remuneration for the trouble. This last year he mixed it with other substances for a compost, which will be more particularly described in another place. It is desirable, especially if an immediate result is expected, that it should be reduced to as small particles as possible. If it is cast upon the soil, or buried up in it, in large lumps, it requires

a long period for an entire disintegration of its parts, so as to yield nutriment to the plant; and immediately in the vicinity of the deposit, it may be too powerful for the purpose intended. If what is termed guano is of value to justify the prices paid for it, the inference is very fair, that a kindred article, to be had on our own premises without money or price, save the labor of collecting it, should not be despised.

Guano is the excrements of sea fowls, and is an earthy substance of a grayish brown color. It is found mostly on the islands and coast of Africa and South America, in latitudes where the weather is so dry that decomposition has proceeded slowly, and it has consequently accumulated in large quantities.—Some of the deposits are fifty or sixty feet in depth. Its value has been known to the inhabitants of Peru from time immemorial. They are indebted to it altogether for the fertility of their crops. In those volcanic regions, nothing, as it were, can be raised without it. In England there is a general demand for it, so that in a single year, from July 1844, there were imported thither 373,000 tons, at an average value of thirty-three dollars per ton. In the United States the use of it is quite recent, and the demand comparatively small.

Fish as a manure.—On the sea-coast, and in some instances at the mouth of large rivers, fish are used as a manure. On the shores of the Elbe, occasionally immense quantities of herrings are caught and thus used. The most common way is to spread the fish, and in a few days to plow them under. But the better mode is to cover them with quicklime, and subsequently to mix them with earth. In a short period they are decomposed. Or they may be strewed in layers on compost beds, with peat, ashes, slacked lime, charcoal, and vegetable matters. It becomes a powerful fertilizer. In the districts where fish are so easily obtained as to be used for this purpose, the mode of doing it has become so well understood by practical farmers, as to render any further account of it altogether unnecessary.

PREPARING OSAGE ORANGE SEED.—Isaac L. Stanley, of Rensselaer, Indiana, says, to prepare this seed for planting, "Tie it up in a bag and sink it in running water three or four weeks; if you have no running water, deposit in any vessel filled with cold water, taking care to change the water every day, to prevent fermentation. He thinks this is not generally known, and imparts it as having been proved to be a good plan, by two year's experience.—*Prairie Farmer.*

PRECISELY SO.—He was a sensible man who used to say to his wife, "It is useless quarreling, my dear, for you know we must make it up again."

CULTURE AND USE OF CELERY.

CELERY is a hardy biennial plant. The blanched leaf-stalks are a very excellent raw salad. It is supposed to be a native of Great Britain; and, in its wild state, is found in marshy grounds and ditches, having a coarse, rank taste. Under judicious cultivation, it is surprisingly altered, becoming sweet, mild, and crispy. There are many varieties, but what is called the white solid is usually esteemed the best. It is produced from seed, and one ounce of seed is sufficient for ten thousand plants. It requires a soil rather moist; rich in vegetable mould, but not rank, from new, unrotted dung.

The seed should be sown in drills, ten or twelve inches from each other—if wanted for early use, in hot-beds; or if not, the latter part of March, in beds having a good exposure to the sun. If the weather be dry, moderate waterings should be given, both before and after the plants come up. As soon as they are up two or three inches, they may be transplanted into other beds, in sunny situations, formed of old hot-bed dung, or well-rotted stable manure, mixed with one-fourth of its bulk of finely pulverized earth. Here they should be set three or four inches apart, and be daily watered, until they have taken firm root, and as often afterward as the dryness of the weather may require.

After the plants have attained the height of six or eight inches, they may be transplanted into trenches. The ground selected for these trenches should be rich, and have an open exposure. These trenches should be five or six feet distant from each other, and from fifteen to twenty inches in depth—the earth removed from the trench being placed on each side of it. The trench is to be filled up three or four inches with dung, well rotted. On top of this dung, loam is to be cast, two inches in depth, mixing both together. Then a row of the plants is to be set in the middle of this compost, with a distance of five inches between each two. The tops and roots of the plants are to be trimmed before being set in the trenches. If the weather be dry, they must be watered freely; and till the roots are firm, and the plants begin to grow, they should be covered over in the daytime, so as not to feel the heat of the sun, but the covering removed in the night, to receive moisture from the dew.

It is needful that the dirt be loosened occasionally about the roots of the plants in the trench: they will grow the better for it; and when they are risen up eight or ten inches, the process of filling up the trench may be commenced, to be repeated every week or ten days. This is to be done when the weather is dry, and the leaves are to be pressed together, which will keep them erect; the whole growing together in a mass, will be more delicate than

though spread out apart from each other. In the first few mouldings or earthings, as it is called, the dirt should be sparingly pressed against the stems, forming a slight ridge on each side of the rows, leaving a hollow to receive the benefit of the waterings or rain. When the plants become strong enough to bear a mould of six inches in height, the earth may be drawn up equally on each side, preventing it as much as possible from falling into the hearts of the plants. This may be done by tying a string around the leaves, or by pressing them together by one hand, while the other draws up the earth. When the moulding is finished, the string if used, is to be removed.

By the above means the stems will all be blanched as they rise upward, and will have a peculiar delicacy of texture, as well as of taste. The earthing is to be continued as long as the plants continue to grow. It will sometimes grow to the height of two feet, and two feet and a half. The winter store is usually kept in sand, and covered with straw, in an erect posture, as when growing. The sand keeps it fresh. If the whole root is taken up uncut, the stump, after the cutting off the head, will again sprout in a warm cellar, and yield a second supply of small, but very sweet and tender celery. Some of the New Jersey Gardeners, who supply the New York market, have raised each 60,000 heads in a season, which, at six cents the head, the wholesale price, would amount to \$3600. This shows how profitable its culture may be made, small as the business may appear. If it were generally understood how easily it is produced, few only would neglect to raise enough for their own families. Taken directly from the trench or from the sand in the cellar, it has a delicacy and freshness which it does not possess after being in market, and its transition thereto some days.

CULTIVATING BARLEY.—*One man's Opinion*—Mr. Drofannah Knox, of Mt. Healthy, Ohio, writes to the Genesee Farmer:

The soil best suited for barley is of a light, dry, nature; but we raise it here on clay subsoil with success. I sow as early as the ground can be got into a mellow condition after sowing the oats. We sow at the rate of two bushels per acre. If it is late in the spring, a little more should be sown. A light harrow should be used to cover the seed.—Twenty-five to thirty bushels per acre is considered with us, a good crop. If the land is wet, it is better not to sow until it works fine, even if you have to wait till late in the season. Barley is an excellent crop after potatoes, when the land has been well cultivated.

WAGONS AND CARTS FOR FARMS.

A FARMER in England, named Edward B. Liddington, has produced a prize essay on the comparative merits of wagons and carts, which deserves attention; for, if he is right, our farmers in general are wrong. After five years' experience with wagons, and nearly the same with one-horse carts, on a farm of one hundred and seventy acres of arable land, and eighty acres of pasture, he came to the conclusion that the carts were of the greater advantage.—As our farmers mostly use wagons, let them pay some attention to his statement. He says: I have no light plowing land, nor have I more than twenty or thirty acres of very heavy land. I will, therefore, relate my actual experience. In the employment of wagons and the old broad-wheeled dung carts, I require one wagon, one cart, and three horses, to every fifty acres of arable land. I also kept a light cart for general purposes. Now that I am employing carts, I find that I get through my work much more easily with two horses and two carts to fifty acres.

In the calculation of items, his saving was near four dollars in the cultivation of one acre, a year. Again, he says: It is admitted that one horse, attached to a given weight, will move it more easily than two horses attached to double that weight.—This arises not only from the advantage gained by having all the power of draught close to the work, but also, all applied at the same moment, which is almost impossible where two or more horses, having different wills and steps, are attached to the weight; and for the same reason, one horse will travel more quickly.

When a cart is filled, there is no delay in attaching the trace horses, during which operation the one horse would be two hundred yards on the road. I know this might be done more quickly by having men ready to change the horses, as is the practice of opposition coaches; but I am speaking of the matter-of-fact working of the system. Then, again, when the load is deposited, the one horse turns in much less time than the two or three. These facts are too self-evident to admit contradiction; indeed, I believe the economy of carting manure in one-horse carts is generally allowed; but this employment of them in harvesting is much objected to. In this respect, however, I find them equally expeditious and economical. My actual experience is, that three carts, with the harvest frames attached, will convey as much hay or corn in the straw as two wagons, and that they are bound with ropes in the same time; therefore, no time is lost in binding.—They are easier to pitch into than wagons, and not more difficult to unload; and all the advantages are gained of speed in traveling.

My attention, says he, was first drawn seriously to the subject from hiring a man to draw some stones for draining. He came with a horse only fourteen hands high, and a small cart, when the work he accomplished so surprised me, that I at once decided to try two light carts, which, after succeeding well in all other operations, I employed in the harvest-field; and being fully satisfied with them in this capacity, I soon discarded every wagon from the farm.

A CHEAP WAY OF DISSOLVING BONES.

THE fertilizing properties of bones have long been placed beyond a question. The great difficulty has been to make their fertilizing properties easily and cheaply available, by all persons engaged in agriculture, however limited their knowledge. In their natural state, bones cannot be rendered available for purposes of fertility, and it is in consequence of this fact that so many bones are turned to no practical account. The same objection does not hold against pulverized bones; but bone mills are not common, and if they were, I question whether one person in ten would avail themselves of their advantages.—That bones can be dissolved by diluted sulphuric acid, is a well known fact; but, in consequence of the expense, trouble, &c., not one farmer in a hundred has ever thus effected their solution. Manufacturers have converted bones into superphosphate of lime, and, when honestly made, it is a valuable fertilizer; but its price, especially when carried far from the place of manufacture, will prevent its general use. The object of this article was to call attention to a cheap and sure way of rendering bones available for agricultural purposes, that every farmer might be induced to save those accruing upon his own farm, and turn them to valuable account.

A few years ago it was asserted that ashes would dissolve bones; but, on further trial, they were found to do so only imperfectly, and then only when crushed. Their value, when applied to clover, wheat, and turnips, to pear trees, grape vines, and old pasture lands, is such as to render it desirable that they should all be turned to economical account.

When getting out manure, a year ago last spring, from my horse barn, I discovered several white, pul-taceous masses, which, on examination, proved to be bones in a perfectly pulpy state. Their change could only be accounted for on the supposition that the horse manure had, by some unknown means, affected their disintegration. The thought occurred to me that this accidental discovery could be turned to good account. Accordingly, during the ensuing year, all bones from the kitchen were thrown into the manure heap, constantly accumulating from the horse stable. Last fall that manure was removed to my orchard, and the bones were found in a soft and

pulpos condition. The bones used were all fresh, and hence I know nothing experimentally of the effects of horse manure upon old bones.

It is but just to observe that, since these experiments were made, I have seen a short article, detailing similar experiments, in some paper, copied from an exchange without name or credit. Hence, facts like the above, may not be new to some of our readers, yet I trust the importance of the subject will justify a repetition.—O. C. GIBBS, M. D., Freesburgh, Chautauque Co., N. Y.

From the Country Gentleman.

EXPERIENCE IN GROWING CORN FODDER.

I procured in Boston last May, a quantity of the White Dent Corn, and sowed in drills for the purpose of securing sufficient fodder for my stock for the coming winter. My anticipations were fully realized in the crop. I cut it, let it remain on the ground two or three days, then bound it up and set it up in stacks of about eight bundles, and let it remain till snow fell. It being in complete order I supposed it safe now to put up in stacks, which I did around a pole set in the centre. In January I was surprised to discover my corn fodder all on fire to appearance; smoke or steam arose several feet above the stack, and the stacks began to settle. On examination, I found my excellent corn-fodder was ruined entirely. I put about four tons into the barn, which proved to be the best fodder I ever fed to cattle. I consider it the cheapest fodder I can raise.

TWO CROPS A YEAR.—I sowed a small piece of ground the first day of June with the White Dent Corn in drills, and harvested the first day of August, fodder measuring eight feet in height, which is rather too large for profit. I plowed the same piece, and sowed it the second day of August, and had another good crop three feet high, and very nice to feed green.—A. WILLARD, Jr., Hartford Wash. Co., N. Y.

CHERRY STONES.—J. C. Holmes, after stating the well known fact that cherry pits must be buried while yet fresh, said that he planted them at once, spreading tan-bark over them if the season was dry. The following spring they come up through the tan-bark, and do much better than if planted in spring. To which we may add, that if cherries are planted in the autumn, with an earth covering merely, a serious difficulty often occurs, in the hard crust formed on the surface, through which the young cherry plants find it sometimes impossible to penetrate. The tan-bark obviates this difficulty—finely pulverized stable manure, and perhaps peat or leaf-mould, would do the same.—*Country Gentleman.*

A LIFE of ease is mostly a life of sin.

SOWING GRAIN IN ORCHARDS.

We frequently see this folly along the line of our railroads, in our summer travel. Here we see a splendid crop of rye, and there a vigorous growth of oats or barley. Sometimes Indian corn is planted in a young orchard. We believe the practice to be bad husbandry. A neighbor of ours has an apple orchard, set about ten years since. He took admirable care of it for several years, washing the trunks and larger limbs with strong soap-suds, and manuring them abundantly. The orchard was a beautiful sight, and began to bear fruit. Three years ago he stocked it down with rye. The crop was a good one, but it proved disastrous to his orchard.—It checked the growth of wood, and it has borne no fruit since. Similar facts are abundant in the experience of farmers. We cannot tell, perhaps, all the causes of this injury to fruit trees. Any grain is a heavy draft upon the land, and probably uses up the material the young trees want to perfect their fruit. A grain crop shades the soil very much also, and this must prove injurious. It is well to keep a young orchard under cultivation for some years, but the ground should only be cropped with roots, and abundantly manured. An orchard will pay us for our trouble according to the capital and labor we expend upon its cultivation.—*American Agriculturist.*

SHARPENING EDGED TOOLS.

We translate the following from a German scientific journal for the benefit of our mechanic and agricultural laborers:

"It has long been known that the simplest method of sharpening a razor, is to put it for half an hour in water to which has been added one-twentieth of its weight of muriatic acid, then lightly wipe it off, and after a few hours set it on a hone.—The acid here supplies the place of a whetstone, by corroding the whole surface uniformly, so that nothing further than a smooth polish is necessary. The process never injures good blades, while badly hardened ones are frequently improved by it, although the cause of such improvement remains unexplained.

"Of late this process has been applied to many other cutting implements. The workman at the beginning of his noon-spell, or when he leaves off in the evening, moistens the blades of his tools with water acidified as above, the cost of which is almost nothing. This saves the consumption of time and labor in whetting, which moreover speedily wears out the blades. The mode of sharpening here indicated would be found especially advantageous for sickles and scythes."

The prize crop of Indian corn in the State of Ohio, for 1855, was 162 bushels per acre.

From the American Agriculturist.

CHICCORY—IS IT A BAD WEED?

On page 100 I find an inquiry about chiccory:—"Will some one inform me if it is a bad weed?" The Chiccory, Wild Endive or Succory, is a syngenesius plant, a native of most parts of Europe, and is the *Chicorium intybus* of Linnæus, and was first cultivated in England, in 1780, by Arthur Young.—It was highly recommended by him as an herbage plant, but he added that it was difficult to eradicate it when land had once been stocked with it. Pliny mentions a plant by this generic name, which was extensively cultivated in Egypt as a salad plant;—this was the *Chicorium endivia*, which is a native of the East Indies, of which there are several varieties, as seen in the New York markets. The *Chicorium intybus* grows with a stalk about three feet high, with blue flowers, the leaves somewhat resembling those of the Dandelion, but larger and more hairy.

It was probably from the high recommendation given by Young, that the State of New York, in their early operations to promote the agricultural interests, in 1812-'14, procured and distributed a quantity of this seed through western New York. I have seen, within the last few years, several places where it was sown in small patches at that time, and the owners have never been able to eradicate it.

In Germany, and some other countries, it is cultivated as a substitute for coffee, in which case it is cultivated as we do carrots or the vegetable oyster, and the root, which is the part used, very much resembles the latter. Mixed with coffee it imparts a pleasant flavor, which some would pronounce an improvement.—N. GOODSSELL, New Haven.

GOOD VARIETIES OF APPLES FOR GENERAL CULTURE.—There is an increased degree of interest on the subject of fruit growing. We have, from different sections of the country, inquiries for a few of the best kinds of Apples adapted to general culture. With the diverse experience of different cultivators, and so many individual tastes to consult, as well as the variation of climate in the same latitude, it is next to impossible to make out a list that shall give general satisfaction. However we will name a few—not quite at random—which, if not the very best in all cases, will, we think, disappoint no one who shall plant them.

For Northern New England:

The Early Harvest; Fameuse; Baldwin; Roxbury Russet; and Hubbard's Nonsuch. For a sweetening, Danver's Winter Sweet.

For Central New England:

Early Harvest or Red Stranahan; Golden Sweet-

ing; Porter; Peck's Pleasant; Baldwin; Rhode Island Greening.

For the Valley of the Hudson:

American Summer Pearmain; Fall Pippin; Graevenstein; Newtown Pippin; perhaps Northern Spy; at Western New York, add Tolman's Sweet.

For a more Southern latitude, say the Valleys of Pennsylvania:

Summer Rose; Yellow Bellflower; Fall Pippin; Rhode Island Greening; Herefordshire Pearmain; Bullock's Pippin.

To our Correspondent in Ohio, we would suggest:

Summer Rose; Fall Pippin; Red Canada; Rawle's Jennet; Belmont Greening.—*American Agriculturist.*

RAISING THE TOBACCO PLANT.

The following concise directions for the cultivation and management of tobacco are chiefly taken from a communication drawn up by Mr. J. F. Edmunds, of Mecklenburg, Virginia, and originally published in the Farmer's Register.

The land for the plant-bed is usually selected in a warm exposure, on the south or south-eastern side of a hill, in a wood, new land being always preferred. From this the roots should be grubbed, the rubbish cleared away, and the old leaves raked off. Brush of pine or other wood is then to be piled on until from two to three feet thick all over the bed, and this is to be set on fire. As the beds should be prepared for seeding immediately after the frost is out of the ground, the brush should be collected and put in place some time during the winter. Instead of burning over the whole bed at once, a part may be fired for an hour or so at a time, proceeding thus over the entire bed. The place is then to be broken up with hoes, and sometimes with coulters drawn by horses or oxen, and the work repeated till the earth is made perfectly fine, being careful to avoid turning under the surface. All the roots should then be extracted, and the land laid off in beds (slightly elevated if dry, and more if moist or wet) four feet wide. And to sixteen square yards, a common pipe-bowl of seed is sown. The bed is then trodden or pressed with hoes, and well covered with brush, to protect the plants from frosts. When the plants have come fully out, they should be slightly manured with strong manure, made fine: this should be repeated frequently, and in larger quantity as the plants increase in size and are able to bear it.

When the plants have attained a good size, and there is no longer danger of frost, the covering of brush is removed, and the bed weeded with the hand, those employed in this duty taking great care to avoid bruising the tender plants. The beds require frequent picking to keep down the weeds.

Preparation and Planting.—The plants will be generally ready for removal about the last of May or first of June. They are to be drawn out after a rain, and transplanted in good ground, previously well prepared for their reception.

Soil and Season.—The best tobacco is grown in rich, light, alluvial, loamy land, or such as has been recently cleared and brought into cultivation. Tobacco requires a mild and warm season, and can never be worth growing in situations elevated much above the level of the sea, in northern exposures, or in wet and springy land.

Field Culture.—The land for tobacco should be of the best quality, either newly cleared and virgin soil, or old ground highly manured and well pulverized, or good clover fallow, plowed in the fall, manured and cross-plowed in the spring, just before planting, well harrowed, and then laid off with a plow in rows three, three and a half, or four feet apart each way. Every square thus made is to be scraped with the hoe, so as to form a hill in which one plant is to be set. In case the plants die from drought, or are destroyed by worms—a very common occurrence—others must be set in their places.

Cultivation.—The culture is very much like that usually adopted for Indian corn—the plow, cultivator, and hand-hoe being freely used to keep down weeds and loosen the earth.

It is important to the early growth of the plant to plow and work deep once or twice, so that when it is ripening, the ground will be broken deep and fine. (The coultter is preferred for this operation.) This should be effected without much interference with the roots, as that would check the growth, and prevent the plant from attaining its proper size. And hence the advantage of greater distance between the rows than the common distance of three and a half feet; because the wide rows can be plowed and worked with less damage to the roots. In this, as in all other crops, if we wish a good return, “we must speed the plow” and hoe before the roots run out. On our high lands we should endeavor, by deep and horizontal plowing, to counteract the bad effects of drought. On our flats, we should aim to prevent the collection of water, by drains discharged at the lowest point.

The bed is best for high land, because it retains more moisture where it is generally needed. The hill, retaining less moisture, is best for flat land, where there is commonly a superabundance.

A right education is not merely the reading of many books, but the ability of making knowledge useful to ourselves and others. It is not simply to acquire influence over our fellow creatures, but to make that influence subservient to moral excellence and piety.

ADVICE TO WIVES.

THOU shalt not consider it fashionable, cleanly or economical, to sweep the streets with one hundred dollar dresses—when at home thou considerest thyself fortunate to get calico; nor to promenade muddy side-walks with satin robes and bedraggled under clothes; nor to wear jewels and flowers on thy head, while the feet go “flipety-click” in buskin shoes run down at the heel, and discover to strangers the holes in thy stockings.

Thou shalt not starve thyself and family twenty-nine days out of the thirty to feast thy circle and give a party; nor by the purchase of expensive gew-gaws and finery keep thyself and husband poor; nor run up bills for frills and furbeloes, while the dry goods merchant and thy husband are at their wits’ end how to pay their way; nor lose a half day shopping, to invest four bits. Neither shalt thou devour all thy savings at cotillion parties and balls; nor waste thy substance by improvidence or neglect.

Thou shalt not fret, nor sulk, nor faint, nor fly into hysterics because thine unfortunate husband cannot buy for thee “that beautiful moon, made of such nice green cheese,” and a riding dress to match; nor quit his business at any moment, and take you out a-riding to Paradise. Neither shalt thou ride or walk with other men, nor associate with profligates and spendthrifts in the ball room, or by the wayside, in preference to thy husband; nor, under the pretence of saving his purse, treat him as a simpleton or slave, to stay at home and nurse the children, or follow-thee, at a proper distance, to await thy pleasure, or carry thy lap-dog.

Neither shalt thou substitute sour looks for pickles; neither shalt thou allow hard feelings or unwashed dishes to accumulate; nor withhold either secrets or shirt buttons from the bosom of thy husband; and never omit little kindnesses of any kind.

OILING LATCHES, HINGES, ETC.—An incredible amount of scraping, creaking, banging, and other divers noises, to say nothing of the wear, which results from the want of a little oil, might be saved by going around once a month with a phial of sweet oil and a feather, and touching with oil all the hinges, locks, latches, etc. This would obviate what is certainly a great annoyance.

COFFEE MADE CLEAR.—Clear coffee may always be had with little trouble or expense, by thoroughly stirring into the coffee, after being roasted and nearly cool, the white of an egg, in the proportion of one egg to a pound of coffee; keep it in a warm but not hot place an-hour after, to become brittle.

The maple sugar crop of the United States for the year 1855, is estimated at \$2,720,000

LIST OF PREMIUMS

To be awarded at the Third Annual Fair of Granville County Agricultural Society, to be held in Henderson on the 8th, 9th, and 10th days of October, 1856.

Branch 1st.—Live Stock.

FIRST DIVISION.

First Class—Thorough Bred.

- | | |
|--|------|
| 1 For the best Stallion over 4 years old, | \$10 |
| 2 " " " " 3 and under 4 years old, | 5 |
| 3 For the best Colt over 2 and under 3 yrs. old, | 4 |
| 4 " " " " 1 " 2 " " | 2 |
| 5 For the best Colt under 1 year old, | 1 |
| 6 For the best Brood Mare over 4 years old, | 5 |
| 7 For the best Filly under 3 years old, | 4 |

As purity of blood is the chief point of distinction in this class, a well authenticated pedigree must in every case accompany each animal.

Second Class.

Horses not thorough bred will receive but half the above amount as second premium; but form, size and action will be taken into consideration.

Third Class—Harness, Draft and Saddle Horses.

- | | |
|--|-----|
| 1 For the best pair of match horses, | \$6 |
| 2 " " 2d " " " " | 3 |
| 3 For the best single harness horse | 4 |
| 4 " " 2d " " " " | 2 |
| 5 For the best saddle horse; | 4 |
| 6 " " 2d " " " " | 2 |
| 7 For the fastest trotting horse, | 4 |
| 8 For the fastest pacing horse, | 4 |
| 9 For the best lot of farm horses not less than 3, | 4 |
| 10 For the best heavy draft horse, | 2 |

In the class for harness, saddle and draft horses, form, size, durability, and kindness, are to be the chief points of merit.

Fourth Class—Jacks and Jennets.

- | | |
|---|-----|
| 1 For the best Jack over 4 years old, | \$4 |
| 2 For the best Jack over 2 and under 4 years old, | 2 |
| 3 For the best Jennet over 4 years old, | 3 |

Fifth Class—Mules.

- | | |
|-------------------------------|-----|
| 1 For the best pair of Mules, | \$3 |
| 2 For the best single Mule, | 2 |

SECOND DIVISION.

First Class—Cattle.

- | | |
|---------------------------------------|-----|
| 1 For the best Bull over 3 years old, | \$5 |
| 2 " " 2d " " " 3 " " | 3 |
| 3 For the best Milch Cow, | 5 |
| 4 " " 2d " " " " | 4 |

- | | |
|---|---|
| 5 For the best Heifer over 3 years old, | 3 |
| 6 " " 2d " " " 3 " " | 2 |

In this class purity of stock, size, form, quantity and quality of Milk is to be taken into consideration.

Second Class—Work Oxen.

- | | |
|-----------------------------------|-----|
| 1 For the best pair of Work Oxen, | \$3 |
| 2 " " 2d " " " " | 2 |

In this class, form, size and docility are to be the chief points of merit.

Third Class—Fat Cattle.

- | | |
|---|-----|
| 1 For the best lot of fat cattle, not less than 3 | \$5 |
| 2 For the best single Ox, Cow or Heifer, | 3 |

THIRD DIVISION.

First Class—Sheep.

IMPROVED STOCK.

- | | |
|---|-----|
| 1 For the best Buck, | \$4 |
| 2 For the best pen of Ewes, not less than 3, | 3 |
| 3 For the best pen of Lambs, not less than 3, | 3 |

Second Class—Natives.

Same premium as improved stock.

FOURTH DIVISION.

SWINE.

- | | |
|--|-----|
| 1 For the best Boar of any breed, | \$3 |
| 2 For the best Sow of any breed, | 3 |
| 3 For the best lot of Pigs, not less than 3, | 2 |
| 4 For the best and largest killing Hog, | 3 |

POULTRY.

- | | |
|---|-----|
| 1 For the best pair of Bramas, | \$2 |
| 2 " " " Shanghais, | 2 |
| 3 " " " Cochins, | 2 |
| 4 " " " Dorkings, | 2 |
| 5 " " " Polands, | 2 |
| 6 " " " Sumatra Game, | 2 |
| 7 " " " Common, | 2 |
| 8 " " " Bantams, | 2 |
| 9 " " " China Geese, | 2 |
| 10 " " " Turkeys, | 2 |
| 11 " " " Ducks, | 2 |
| 12 " " half dozen Guinea Fowls, | 2 |
| 13 " " and largest variety exhibited by one person, | 4 |

Branch 2d—Agriculture.

First Class.

- | | |
|---|-----|
| 1 For the best sample of Wheat, not less than half a bushel, | \$2 |
| 2 For the best sample of Corn, not less than half a bushel, | 2 |
| 3 For the best sample of Leaf Tobacco, not less than 10 pounds, | 2 |
| 4 For the best sample of manufactured Tobacco, not less than 10 pounds, | |

- 5 For the best sample of Cigars, one box,
 6 For the best sample of Cotton, 10lbs in seed,
 7 For the best sample of Oats in stalk,
 8 For the best sample of Rye in stalk,
 9 For the best sample of Peas, half bushel,
 10 For the best sample of Beans, half bushel,
 11 For the best sample of Sweet Potatoes, $\frac{1}{2}$ bushel,
 12 For the best sample of Irish Potatoes, $\frac{1}{2}$ bushel,
 13 For the best sample of Turnips,
 14 For the best sample of Beets,
 15 For the best sample of Carrots,
 16 For the best sample of Onions,
 17 For the greatest variety of the above products exhibited by one person,
 18 For the largest average product per acre of Wheat, Corn, Tobacco, and Cotton, and mode of cultivation of each,
 Certificates to accompany the above products, stating their yield per acre.

Second Class—Food, Condiments, &c., &c.

- 1 For the best sample of Pickled Beef, \$2
 2 " " " " Pork, 2
 3 " " lot of Hams, not less than 3, 2
 4 " " Jar fresh Butter over 5 pounds, 2
 5 " " sample of Honey, Tallow Candles, and Soap, each, 1
 6 For the best barrel of Wheat Flour, 2
 7 " " sample of Wheat Starch, 1
 8 " " " Potato " 1
 9 " " " of Wheat Bread, two loaves, 1
 10 For the best sample of Crackers, 1
 11 " " " of Preserves, Pickles, Jellies, Jams, Catsups, Cordials, &c., each, 1
 12 For the best sample of the following dried fruits, viz: Peaches, Apples, Pears, not less than one peck, Cherries, Grapes, Figs, &c., &c., not less than five pounds each, 1
 13 For the best sample of domestic Wine, one bottle, 1
 14 For the best sample of domestic Cider, one bottle, 1
 15 For the best and greatest variety exhibited by one person, 3

Third Class—Horticulture.

- 1 For the best specimen of Apples, \$1
 2 " " " Peaches, 1
 3 " " " Pears, 1
 4 " " " Quinces, 1
 5 " " " Grapes, 1

- 2 6 For the greatest variety of Fruits exhibited by one person, 3
Fourth Class—Fruit Trees, &c.
 2 1 For the largest variety of Apple Trees, \$2
 1 2 " " " Peach " 2
 1 3 " " " Pear " 2
 4 " " " Straw and Rasp-berry Vines, 1
 1 5 For the largest variety exhibited by one person, 4

Branch 3d—Mechanics.

FIRST CLASS.

- 1 For the best Plow of each kind, \$3
 2 " 2nd " " " " 2
 3 For the largest variety of Agricultural Implements exhibited by one person, 5

Second Class.

- 1 For the best 4 Horse Wagon, \$4
 2 " " 2 " " 3
 3 " " 1 " " 2
 4 " " Ox Cart and Yoke, 2
 5 " " Wheelbarrow, 1
 6 " " 2 Horse Pleasure Carriage, 8
 7 " " 2 " Top Buggy, 6
 8 " " 1 " " " 4
 9 " " 1 " Open " 3

Third Class—Harness, Saddlery, &c.

- 1 For the best set of Carriage Harness, \$4
 2 " " " Buggy " 3
 1 3 " " " Single Buggy Harness, 2
 1 4 " " Gents. Saddle, Bridle and Martingals, 3
 1 5 For the best Ladies Saddle, Bridle and Martingals, 3
 1 6 For the best set 2 Horse Wagon Harness, 2
 7 " " " 1 " " " 1
 8 " " lot of Calf Skins, half dozen, 2
 9 " " lot of Russet Leather, half dozen sides, 2
 10 " the best Dressed Sheep Skin, 1

Fourth Class—Machinery.

- 1 For the best Horse Power, \$4
 1 2 " " Wheat Thresher, 3
 3 " " Fan Mill, 2
 1 4 " " Straw Cutter, 2
 5 " " Well Pump, 2
 3 6 " " Churn, 1
 7 " " Corn Sheller, 2

Fifth Class—Cabinet Work.

- 1 For the best Bed Stead, \$2
 1 2 " " Bureau, 3
 1 3 " " Wardrobe, 2
 1 4 " " Wash Stand, 2

5	"	"	Safe,	2
6	"	"	Book-case,	2
7	"	"	Sofa,	2
8	"	"	Rocking Chair,	2
9	"	"	Half dozen Chairs,	2
10	"	"	Hair Mattress,	3
11	"	"	Shuck "	2

Sixth Class—Hats, Shoes, &c.

1	For the best pair of Gents. Boots,	\$2
2	" " " " Shoes,	1
3	" " " " Ladies "	1
4	" " " " Wool Hat,	1
5	" " " " Straw "	1
6	" " " " Grass "	1
7	" " " " Straw bonnet,	1
8	" " " " Grass or Hair Bonnet,	1

Branch Fourth—Manufactures.*First Class—Household and Mill Fabrics.*

1	For the best piece of Woolen Jeans of five yards,	\$2
2	For the best piece of Woolen Linsey of 5 yds.	2
3	" " " " Kersey "	2
4	" " " " Flannel of 5 yards,	2
5	" " " " Vesting,	2
6	" " " " Woolen Carpet,	4
7	" " " " Cotton "	2
8	" " " " Shirting and Sheeting,	2
9	" " " " Cotton Jeans,	2
10	" " " " Tow Cloth,	2
11	" " " " Diaper,	2
12	" " " " Made Gents. Coat,	4
13	" " " " Vest,	2
14	" " " " Pants,	2
15	" " " " Shirt,	2
16	" " " " Hearth Rug,	2
17	" " " pair of yarn and cotton Socks,	2

each,

50c

18	For the best yarn Counterpane,	3
19	" 2d " " "	2
20	" " " " White Cotton Counterpane,	2
21	" 2d " " " "	1
22	" " " " Stuffed "	3
23	" 2d " " " "	2
24	" " " " Bed Quilt,	3
25	" 2d " " "	2
26	" the largest variety of the above articles exhibited by one person,	4

Second Class—Ladies Ornamental Needle Work.

1	For the nicest Piano Cover,	\$3
2	" 2d " " "	2
3	" " " " Table "	3
4	" 2d " " "	2

5	"	"	Ottoman,	2
6	"	2d	" "	1
7	"	"	Emb'd. Handkerchief,	2
8	"	2d	" "	1
9	"	"	" Chemezette,	2
10	"	2d	" " "	1
11	"	"	" Sleeves,	2
12	"	2d	" " "	1
13	"	"	White Emb'd. Child's Dress,	2
14	"	2d	" " " " "	1
15	"	"	Silk " " " "	2
16	"	2d	" " " " "	1
17	"	"	Worsted " " " "	2
18	"	2d	" " " " "	1
19	"	"	White Emb'd. Ladies Skirt,	2
20	"	"	the largest variety of the above articles exhibited by one person,	5

Third Class—Paintings, &c.

1	For the best Oil Painting,	\$5
2	" " " Grecian Painting,	3
3	" " " Pastel "	3
4	" " " Crayon or Pencil Drawing,	2
6	" the largest variety exhibited by one person,	5

Branch 5th.—Essays.

1	For the best Essay on the Cultivation of Corn,	\$5
2	For the best Essay on the Cultivation of Wheat,	5
3	For the best essay on the cultivation of Tobacco,	5
4	For the best essay on the cultivation of Cotton,	5

All articles omitted on the list will be awarded discretionary premiums, in proportion to those named under the different heads.

REGULATIONS.

1. Upon the payment of the annual tax of one dollar, all members of the Granville County Agricultural Society will be presented with a badge of membership, and be required to wear the same during the Fair.

This badge will admit his wife, and children under 12 years of age.

2. By a resolution passed at the last annual Fair, persons from any county in the State, or from any other State, can become members of this Society, upon the same terms, and be entitled to all the privileges of a citizen of the county.

3. The Fair Grounds will be opened for the reception of visitors at 12 o'clock M. on Wednesday. Price of admission, 25 cents, children and ser-

wants half price. Clergymen, Editors, Teachers and pupils of all charitable institutions, admitted free.

4. Agricultural Societies and Institutions from other counties or States, are invited to send delegates. Such delegates will be presented with a complimentary badge of membership.

5. All Exhibitors who intend to compete for the premiums, must become members of the Society, and they are earnestly requested to have their articles or animals entered at the Secretary's Office, in Reception Hall, at or before 10 o'clock Wednesday morning, and no article or animal admitted after Wednesday, to contend for the premiums.

6. All articles or animals entered for exhibition must have cards attached, with the number as entered at the Secretary's office; and exhibitors must, in all cases, procure their cards, before placing their articles or animals on the Fair Grounds.

7. Exhibitors are required to give attention to their animals on exhibition, and must bear the expense of feeding; provisions may be had on the grounds, at the market prices.

8. No premium will be paid on any article or animal placed on exhibition, if removed before the close of the Fair, without the consent of the Chairman of the Executive Committee.

9. The judges will withhold premiums on articles or animals, in their opinion not worthy; tho' there be no competition.

10. The regulations of the Society must be strictly observed, otherwise the society will not be responsible for the omission of any article or animal not entered on its books.

11. To promote the interest of Agriculture, and to make the premiums of a more permanent value, part of the premiums will be paid in money, and the balance in some good Agricultural Work or Periodical.

12 The awarding committees are requested to report themselves to the Chairman of the Executive Committee by Wednesday 10 o'clock, A. M.; and any member finding it inconvenient to attend, will please inform the Chairman a few days before the Fair.

13 The Chief Marshall with efficient aids will be on the grounds during the hours of exhibition to keep order, and a diligent Police will attend at night to prevent accidents; though the committee will not be responsible for any that may occur.

14. The Marshalls are expected to appear on Horseback, and to report themselves to the Chair-

man at 10 o'clock on Wednesday morning, ready for duty.

15. The track will be open every day during the Fair, for the trial of Harness and Saddle Horses. The hours to be regulated by the Marshalls.

16. On Friday the list of premiums will be read out at the stand, and paid immediately at the Secretary's office; but no premium will be paid after the expiration of three months.

17. A good band of music will be in attendance each day during the hours of exhibition; and on Thursday at 11 o'clock, A. M. an Address will be delivered.

18. Chief Marshall, Col. P. E. A. Jones; Aids, Simon G. Hayes and W. B. Foster.

THOS. J. BLACKNALL, *Ch'm'n. Ex. Com.*

A. C. HARRIS, *Secretary.*

AWARDING COMMITTEES.

1. LIVE STOCK.—*First and Second Classes*—Rev. Josiah Crudup, Hon. A. W. Venable, Col. Chas R. Eaton.
2. LIVE STOCK.—*Third Class*—Dr. H. C. Herndon, Wm. A. Harris, Wm. A. Eaton.
3. JACKS, JENNETS AND MULES.—*Fourth and Fifth Classes*—Isaac H. Davis, Col. S. S. Roster, Willie Perry.
4. CATTLE.—*First, Second and Third Classes*—D. A. Paschall, R. H. Gregory, R. P. Hughes.
5. SHEEP.—*First and Second Classes*—H. T. Watkins, Dr. J. R. Herndon, R. A. Hamilton.
6. SWINE.—T. T. Grandy, John Bulloch, Arch'd Davis.
7. POULTRY.—Dr. G. W. Blacknall, Jas. Turner, D. Glover.
8. AGRICULTURE.—*First Class*—J. S. Burwell, Col. J. R. Hargrove, J. W. Weaver.
9. FOOD, CONDIMENTS, &c.—*Second Class*—C. H. Wyche, T. B. Venable, J. H. Gooch.
10. HORTICULTURE, &c.—*Third and Fourth Classes*—Dr. James Russell, Wm. H. Robards, E. Satterwhite.
11. PLOWS, &c.—*First Class*—J. M. Bulloch, Jas. Gooch, Isham Cheatham.
12. CARRIAGES, &c.—*Second Class*—T. L. Williams, T. B. Kingsbury, J. C. Taylor.
13. HARNESS, SADDLERY, &c.—*Third Class*—Wm. B. Hughes, Dr. W. W. Young, John Blacknall.
14. MACHINERY, &c. *Fourth Class*—S. S. Cooper, Dr. H. J. Robards, L. A. Paschall.
15. CABINET WORK.—*Fifth Class*—A. Landis, P. V. Duke, Wm. C. Crabtree.
16. HATS, SHOES, &c.—*Sixth Class*—H. McCadden, Edward W. Harris, George J. Reavis.

17. HOUSE-HOLD FABRICS.—*First Class*—Thomas Miller, K. H. Wainright, J. F. Harris.

18. ORNAMENTAL NEEDLE-WORK.—*Second Class*—Col. W. H. Rowland, Rob't Hunt, W. E. Jones.

19. PAINTINGS, &c.—*Third Class*—T. L. Hargrove, Wm. Crndup, Geo. W. Kittrell.

20. BRANCH 5TH—*Essays*—

1 For the best Essay on the Cultivation of Corn, \$5

2 Do do do do Wheat, 5

3 Do do do do Tobacco, 5

4 Do do do do Cotton, 5

AWARDING COMMITTEE:—Samuel Venable, J. J.

Wyche and James H. Horner.

21. RECEPTION COMMITTEE.—B. W. Green, H. Royster, Geo. W. Wyche.

DESCRIPTIVE CATALOGUE

Of Peaches that have been tested by actual bearing previous to and during the year 1855, by JOSUA LINDLEY, New Garden, Guilford County, N. C.

DESCRIPTION OF PEACHES—1855.

1. *Early Red Nutmeg*.—This is the earliest Peach that has ripened with me. It is a small fruit, about an inch and a quarter in length, and one-eighth less in diameter. It has a nice red cheek, with the opposite side marbled with red; and the fruit ripened with me this very late season, the 27th of June, and will ripen common season the 15th of that month. The tree is of very dwarfish growth, with uniform glands and large flowers, and is only worth cultivation as the earliest peach that ripens. It is very productive.

2. *Early White Nutmeg*.—This peach commenced ripening its fruit just eight days after the first. It is a little larger and similar shaped.—Color much dotted, with red on a white ground, and when fair to the sun showing quite red. It is a little more acid than the other, though a pleasant fruit, and is only valuable as ripening between the first, and the finer varieties of the early peaches. It is a very thrifty tree with uniform glands and small flowers, and is a great bearer, and commenced to ripen its fruit this late season on the 5th of July.

3. *White Nutmeg, (Common)*.—This is about twice the size of the early white, and is much superior to it in sweetness and fine flavor, and it commenced to ripen just one week after that did; but it is of very dwarfish growth, and a thin bearer which renders it unworthy of extensive cultivation.

4. *Sweetwater*.—This is of good medium size; color white, with some touches of red on the sun side. It is a juicy, good peach, but the tree is a bad grower of dwarfish habit, and a poor bearer; and as it scarcely ripens before Early Anne and Early York, it is of little value. It has serrated leaves and large flowers.

5. *Early Anne*.—This is a fine early peach, of a greenish white color, a little under medium size. It has serrated leaves and large flowers, and is nearly as smooth skinned as an apricot, and grows thrifty and bears abundantly, and ripens its fruit rapidly a few days before the Early York, and is highly worthy of extensive cultivation; and it begins to ripen its fruit the 17th of July.

6. *Early Tillotson*.—A good early peach of fine flavor, of nearly medium size, somewhat three-sided in shape, rather long in form, mostly of a fine red color. The tree is a thrifty grower and a good bearer, with serrated leaves and small flowers, and it ripens with the Early Anne.

7. *Early York*.—This is the great peach of the season in which it ripens. The tree grows very thrifty and bears most abundantly when very young, so much so that it ought to be thinned in full bearing seasons to enable the fruit to ripen fine. It has serrated leaves and large flowers.—The fruit when well grown is of nearly medium size, and of a rich, juicy and fine vinous flavor, color red next the sun, on a greenish white ground, and when fair to the sun almost entirely red; in the shade but little touched with red. It commences ripening with the Early Anne, but ripens very slow for the first week, after which time it ripens rapidly until it is through. It commenced to ripen between the 2nd and 8th of July every season that it has borne with me before.

8. *Baltimore Beauty*.—This is a handsome and fine fruit, of good medium size, rather oval, tapering to a point at the top, color yellow, with a red cheek next the sun. Flesh pretty rich, sweet and fine flavored. This is an excellent early peach, and good bearer when young. The tree grows thrifty, has globose glands and large flowers, and deserves to be cultivated extensively, and it begins to ripen two or three days after Early York.

9. *Cole's Early*.—This is a fine early fruit of medium size, ripening two or three days after the Early York. The tree grows thrifty, has globose glands and small flowers, and does not bear as well with me as the Early York.

(To be Continued.)

CATTLE.

As the cattle of the United States not only contribute largely to the comfort and necessities of man at home, but occupy a conspicuous position in our commerce, it will therefore be of great importance to the stock-raiser, as well as small farmer, to know what is the best breed or tribe of cattle from which to select for the various purposes of the farm. To combine as many valuable qualities in the same animal or breed, is the great consideration sought for. The Short-horned is a stock that we can trace back with certainty for over one hundred years, and they are at this day in as great or even greater favor, both with the dairyman and grazier, than at any other date.—There has been another breed of cattle lately introduced—the Bremen—which are highly recommended by many. We have not as yet had sufficient evidence of their combined value as milkers and beef-cattle to give results of trials; but will, so soon as they are brought into competition with our best Short-horns. The Short-horns have borne off most if not all the prizes, when they have come in competition with other breeds, either as to the quantity of milk or quality of beef. We will here give the results of some of the trials of Short-horns at different fairs and at different times. Our farmers may compare the results with the best they are producing, and see if there is room for improvement.

We will first sketch the progress of the first improvement in Short horns.. It commenced in the valley of Tees, England, in the year 1750, through the efforts of Sir William Quinton. It was carried on by Mr. Millbanks, and nearly brought to perfection by Charles Colling. The last named gentleman, by judicious selections and crossings produced the celebrated bull Hubback, from whom are descended the best Short-horns of our day.—Of this breed was the celebrated Durham Ox which was long shown in a traveling-van at country fairs in England, and, when slaughtered in 1807, weighed 2618 pounds, and also the Spottiswood ox, probably the largest ever exhibited. This ox in June, 1802, measured: height of shoulder, six feet ten inches; breadth across the hooks, three feet one inch; computed weight, 4480 pounds!

Messrs C. and R. Colling crossed the improved Short-horns with a red-polled Galway cow, and produced a variety of this breed which was called the Alloy, and for which, at C. Colling's sale in October, 1810, the following extraordinary prices were obtained: for seventeen cows, £2802 9s.; eleven bulls, £2331 9s.; seven bull calves, £687

15s.; seven heifers, £942 18s.; five heifer calves, £221 6s.: total, forty-seven head, £7115 17s.—Robert Colling's stock was sold at Bampton, near Darlington, in 1818, when it produced: for thirty-four cows, 4141 guineas; seventeen heifers, 1287 guineas; six bulls, 1343 guineas; four bull calves, 713 guineas: altogether, sixty-one head of cattle sold for 7484 guineas. Also, one two-year old cow brought 331 guineas; one four-year old, 300 guineas; one five-year old, 370 guineas; one one-year old bull calf, 270 guineas; and one four-year old bull, 621 guineas. Total for five head 1892 guineas.

The superior quantity and quality of the beef of the Short-horns is thus described by James Dickson, (butcher) of Scotland, in the following language: "For quantity and well laid on beef, the Short-horned ox is quite full in every valuable part, such as along the back, including the fore-ribs, the surloin and rump, in the runners, flanks, buttocks, and twist; and in the neck and brisket as inferior parts. In regard to quality of beef, the fat bears an even and due preponderating proportion to the lean, the fibres of which are fine and well mixed, and even marbled with fat, and abundantly juicy."

Mr. Dickson, so far as we are advised, is fully sustained by the first butchers of the United States. As to the milking qualities of the Short-horn cow, we cannot do better than give the testimony and reference of Mr. Vail, of Troy, New York, a well known importer and breeder of blood-ed cattle. In a communication addressed to the Secretary of the Ohio State Board of Agriculture, he has well set forth the superiority of the Short-horns as adapted both for the dairy and butcher. He says: "You ask if, for the small farmer, either of the improved breeds of cattle will meet the public expectation, when we breed for milking and fattening qualities in the same animal; or whether a cross with the Holderness, or other breeds, would improve their qualities for all uses? In answering this question, I will premise by saying I am aware that many Durhams have been bred with special reference to their aptitude to take on flesh, without much regard to their milking qualities; consequently, many of these are unfitted for the dairy. There are, however, families or tribes of Durhams possessing superior daily qualities, and when no longer useful as milkers, on account of age or other causes, may be turned off, and then take on flesh about as rapidly as those which are bred exclusively for the butcher. If I am correct in this opinion, then I am prepared to haz-

ard the assertion, that no useful result can be arrived at by crossing the Short-horn cow with any other breed, with the prospect of improving upon the dairy qualities of the best milking families or tribes of Short-horns which may be procured in this country. That there are tribes of such Short-horns that are not inferior to the best native dairy stock in the country, I think there cannot be a doubt. If so, then it is obvious that it would be a waste of time to attempt to rear a new breed of cattle for dairy purposes, as such experiments would occupy many years to test their utility, and it is believed that no practical breeder would attempt it. I now proceed to show that there are specimens among Short-horns in this country which are superior to most if not all the breeds of this country for dairy purposes. In 1844, the New York Agricultural Society offered a premium for the largest amount of butter, to be the product of six cows of any breed, in thirty consecutive days; the cows to be kept on grass pasture or green fodder, and not to be allowed slops or such other feed for thirty days previous to or during the trial.

"In order to test the dairy qualities of the Short-horns compared with other breeds, and thus give the great dairy interest of the country an opportunity to form a judgment on the relative merits of different breeds of cattle for dairy purposes, I put six Short-horns on trial, and kept them on grass alone; and the result was, they produced in thirty days two hundred and sixty-two pounds and nine ounces of butter, it being an average of forty-three pounds and twelve ounces to each cow.

"To ascertain the quantity of milk the six cows gave, I carefully weighed and measured the milk drawn from them in one day, and the result was, a weight of two hundred and sixty-five pounds ten ounces, which measured one hundred and thirty-four quarts, wine measure, averaging twenty-two and one-third quarts per day. It is proper to state that I had twelve cows, from which I selected the six for trial. This statement may be found recorded in full in the Transactions of the New York State Agricultural Society for 1844, page 215. I had one cow, Young Willy, that produced in seven days thirteen and a half pounds of butter. I sold a two-year old heifer called Ruby, daughter of the above, to S. P. Chapman, of Madison county, New York. He put his heifer on trial, when five or six years old, to compete for a premium offered by the society above named, for the largest quantity of butter made from one cow in ten days in June and ten days in August, 1850, to be fed on grass pasture only. She produced a fraction over forty pounds of butter in these twenty days, and was awarded the first premium. Another cow I called Eunice First. I had her milk, the produce of one day, measured, and the result was thirty-two quarts, wine measure. Eunice Second produced in one day thirty-four and a half quarts of milk, and there had been previously made from her milk nineteen and a half pounds of butter in seven days. Besides the tribes of which the above were members, I had others of superior milking qualities, whom I could refer to; and I doubt not here could be selected from the numerous herds of Short-horns in this country, equally good milk-

ers with those referred to." Mr. Vail further adds, "I do not wish to mislead any one in this matter, and therefore it is proper to say, that although it is a generally received maxim that "like begets like," yet there may, and probably will be, individual exceptions to this rule, relative to the milking qualities of the progeny of every animal bred from such cows. My experience is, that it is rare that a failure will occur, when uniform good milkers are bred to a male descended from an equally good milking stock. Hence, it will be seen that the selection of a male is all-important when milking qualities are sought."

The superiority of the Short-horns over all other breeds is fully proved, not only by the awards of competent judges, but by the length of time that they have sustained their popularity, both in America and Europe. There are many herds of these well bred animals in different parts of this State; full information as to where and of whom they may be had will be fully given so soon as we hear in an *authentic* manner from those having such stock for sale.—*Tennessee State Farmer and Mechanic.*

COTTON CLEANER.—A new machine for cleaning cotton has recently been invented by Mr. J. B. Mell, of Riceboro', Georgia, which promises some advantages over the gins now in use. It consists in an ingenious relative and combined action of brushes and teeth, with which the rollers are armed. By the operation of these the pure cotton is rapidly taken from the mass of the feed, leaving the seed as well as the dirt behind. The card or teeth, and brush-rollers, revolve in opposite directions, so that, as the former raises the cleansed cotton, the latter sweeps it off, and it passes down the "discharge" and out of the box without interruption.

RECEIPTS FOR THE ARATOR.

SINCE APRIL No.—\$1, each, Dr. Willie M. Per-son, Franklinton, N. C.; D. A. Humphrey, Swans-boro, N. C.; Thos. B. Bradley, Shelby, N. C.; Dr. J. Ford, J. Elaxanders, Elkanah; D. Austin, Rowan Mills, Rowan Co., N. C.; D. G. Neely, Fentress, P. O., N. C.; Dr. J. J. Phillips, Battleborough, N. C.; R. Norfleet, Tarboro, N. C.; R. Harris, Salisbury, N. C.; Col. A. Joyner, Weldon, N. C.; J. P. McLean, Fayetteville, N. C.; J. M. Wynne, Mur-freesboro, N. C.; J. B. McNeely, Miranda P. O., Rowan Co., N. C.; Robert Harris, Rowan Mills, N. C.; W. W. Mitchell, Winton, N. C.; J. A. Vaun, Winton, Hertford, Co., N. C.; Dr. R. C. Perkins, Camden, C. H., N. C.; Col. D. S. Johnston, Mad-ison, Geo.; \$2, M. A. Murrell, Jacksonville, Onslow Co. N. C.; \$1.30, Hon. W. H. Battle, Chapel Hill, N. C.; 10 cts. Thos. C. Foust, Graham, N. C.; \$1, G. W. Allen, Cairo, Edgefield Dist. S. C.; David S. Jones, Beaufort, N. C.; N. W. Guilford, South Creek P. O., Beaufort Co., N. C.; Geo. W. Charles, E. City, N. C.

CONTENTS OF MAY NUMBER FOR 1856.

Agricultural Education,	419
Agricultural Society of U. S.—annual meeting of,	425
An American triumph in Europe,	434
Animal manures,	435
A cheap way of dissolving bones,	437
Advice to wives,	440
Culture of the Hop,	417
Culture and use of Celery,	436
Cultivating Barley,	436
Cherry Stones,	438
Chicory—is it a bad weed,	439
Cattle,	400
Devon Cows,	420
Deep plowing and pulverizing,	421
D. O. Moffitt, Communication of,	430
Descriptive Catalogue of Peaches,	343
Editorial Correspondence,	434
Foreign Correspondence,	400
Good and bad Farming,	427
Growing Corn Fodder,	438
Good varieties of Apples for general culture,	439
How to raise Foreign Grapes under Glass,	429
How to get early Potatoes,	431
Horses,	433
Meteorology for Farmers,	422
Osage Orange Seed,	435
Raising Potatoes under straw,	424
Sweet Potatoes,	423
Special manures,	421
Salt for Animals,	424
Stock Raising,	432
Sharpening Edged Tools,	438
The Plow-boy,	428
Trees from Seed,	432
Tobacco Plant, raising of,	439
Wagons and Carts for Farms,	437

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-45

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents. FURNISHING ARTICLES. Our facilities for *buying cheap*, and having our goods *made up* under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

W. L. POMEROY,
PUBLISHER.

BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-46

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS ENTIRED ARTS.

VOL. II.

RALEIGH, JUNE, 1853.

NO. III.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

TANNING AND CURRYING.

TANNING is the art of manufacturing leather from the skins of various animals, and is founded on the fact that the tannic acid contained in the barks, being an astringent, hardens the animal jelly contained in the hides, so that they become close-grained, compact, and insoluble in water. Tannin also precipitates the green vitriol, or copperas, (sulphate of iron,) that accumulates between the hair and skin.

The outer coating of the hemlock, and various species of the oak, are the principal materials generally used in the United States: the former for the great body of sole leather; the latter, for the various harness and upper leather.

The trees are felled in the season when the sap is ascending, from May 1st to September 1st, though usually only from May 15th to August; and the bark is easily peeled off in sheets of any required length, but usually four feet long. It should be suffered to lie with the inner surface exposed to the sun one or two clear days, to dry up the sap on that surface, when it should be gathered into piles of a square form, in a dry place, on poles above the ground, and be protected by large pieces, laid care-

fully on the top of the pile. The body only is peeled in this country, except the larger branches of the oak; while in England the small limbs, and even twigs, all that will peel, are saved, and thought to be stronger than the body bark. Thirty days of dry weather will cure the bark sufficiently for use. But in a large business it is drawn to a road-side, after harvest, and piled in like manner, and is suffered to remain until fall or winter, when it is drawn into the tannery, and stored in large piles in the open air, or in cheap open sheds, and taken into the tannery as wanted. At the North this is usually done in winter, which makes good sleighing almost as important to the tanner as bright skies in June and July.

Chemical tests give to hemlock bark only 3 $\frac{1}{2}$ to 6 per cent. tannin; American oak not more than half as much, while English hedge-rows is 16 per cent. The chestnut oak, which grows very abundantly in some parts of the South, furnishes an excellent and plentiful bark for tanning purposes. Various other foreign substances contain tannin. Valonia, of Turkey, or the acorn cup and ball, gathered in the green state, is the favorite in England; and it is believed that the great burr oak of the Middle States yields an annual crop of the same material, which, if gathered, would be sufficient for all the tanning of America, and save the destruction of our noble forests now going on so rapidly. The strongest article known is kutch, imported from the East Indies, evidently an extract boiled down to salts, which contain about 55 per cent. pure tan. It is too expensive for common use in this country, but it is much used in Eu-

gland, in liquors for heavy stock. It is computed that for every cord of hemlock bark four trees are peeled, and one cord will tan five hides. If the whole quantity of leather is 1,000,000 sides, 200,000 trees are annually destroyed to furnish the bark.

The skins of animals are immersed for several days, or even weeks, in water with bark, mostly of oak or larch; and other astringent substances, as *terra japonica*, are employed, which shortens the time, but renders the substance more hard and brittle. Another method is by *tawing*. They are left to soak for six weeks, in water with fresh slacked lime, changed twice, rinsed, again soaked in water mixed with wheat bran, until they float, but, when beaten down, do not rise again. The bran is then scraped off, and a liquid paste is prepared; for 100 sheep-skins, 8 pounds of allum and 8 pounds of salt are dissolved in warm water, and added to 20 pounds of fine wheat flour and 36 yolks of eggs. A ladlefull of this paste is put into a trough of warm water, in which 12 skins remain for some time, and are then pulled and stretched; and this is repeated twice.—They are then left six days, and afterwards quickly dried.

Slow tanning makes leather softer and stronger.

Time and labor are both materially reduced, and the quantity and weight of the leather increased, by the substitution of *water-power* for manual labor, in many of the most laborious parts of the process; viz: to soften and cleanse the hide preparatory to the bark being applied to it; to grind the bark; to move pumps for transferring the decoction of the bark from one vat to another, (much of which is necessary to be done daily in an extensive tannery,) and to roll the leather preparatory to its being sent to market; also the least possible quantity of lime is now used to facilitate getting off the hair. This has been found greatly to add to the weight and quality of the leather. The application of heat to the bark, in *leaches*, is found to be very important, and more particularly the application of the decoction (usually termed *liquor*) to the hide, rather than the bark.

CURRYING is the art of dressing cow-hides, calf-skins, seal-skins, etc., principally for shoes; and this is done either upon the flesh or the grain. In dressing leather for shoes upon the flesh, the first operation is to soak the leather in water until it is quite wet, then the flesh side is shaved on a beam about seven or eight inches broad, with a knife of peculiar construction, to a proper substance, according to the custom of the country and the uses to which it is destined. This is one of the most curious and laborious steps of the whole process. The knife used is of a rectangular form, with two handles, one at each end, and a double edge. It is thrown into wa-

ter again, and sponged on a board or stone commonly set apart for that use. Scouring is done by rubbing the grain or hair side with pumice-stone, or with some other stone of a good grit. These stones force out of the leather a white substance called the *bloom*, produced by the oak-bark in tanning. The hide or skin is then conveyed to the shade or drying-place, where the oily substances are applied termed *stuffing* or *dubbing*; when it is thoroughly dry, an instrument, with teeth on the under side, called a graining-board, is first applied to the flesh side, which is called *graining*—then to the grain side, called *bruising*. The whole of this operation is to soften the leather to which it is applied. Whitening or paring succeeds, which is performed with a fine edge to the knife already described, and used in taking off the grease from the flesh. It is then boarded up or grained again, by applying the graining-board first to the grain and then to the flesh. It is then fit for waxing, which is now performed by coloring, which is done by rubbing with a brush, dipped in a composition of oil and lamp-black, on the flesh, until it be thoroughly black. It is then sized, called *black-sizing*, with a brush or sponge, dried and tallowed; and when dry, this sort of leather, called *waxed*, or black on the flesh, is curried. The currying leather on the hair or grain side, called *black on the grain*, is the same as currying on the flesh until we come to the operation of scouring it. Then the first black is applied to it while wet, which black is a solution of sulphate of iron or copperas, in plain water, or in the water in which the skins as they come from the tanner have been soaked. This is first put upon the grain after it has been rubbed with a stone; then rubbed over with a brush dipped in stale urine; the skin is then stuffed, and when dry, it is seasoned—that is, rubbed over with a brush, dipped in copperas water, on the grain till it is perfectly black. After this the grain is raised with a fine graining-board: when it is thoroughly dry it is whitened, bruised again, and grained in two or three different ways, and when oiled upon the grain with a mixture of oil and tallow it is finished.

Tennessee State Farmer and Mechanic.

At the great Industrial Exhibition, wood screws from all parts of Europe were submitted in competition, but none were so much commended as those from New England. The latter are so sharply and perfectly cut, with a point so fine and faultless that they may be driven with great ease and rapidity, obviating the necessity for boring that was formerly experienced. They range from a quarter inch to six inches in length, and from the size of a small knitting needle to nearly half an inch in diameter; the smallest being as perfectly cut and finished as the largest.

From the Country Gentleman.

EXPERIENCE VS. EXPERIENCE—FALL PLOWING, &C.

In examining the various agricultural papers, how often do we find the experience of A. to be the direct opposite of that of B., while neither agrees with C., and neighbor D. has found all of them very different from his own. This apparent discrepancy no doubt arises from the varying circumstances attendant upon them. Once on a certain time, I had a considerable portion of leached ashes which was applied to a dry clay bank or hill, and its effect was to render the corn, which was planted directly afterwards, of equal growth to that where stable manure was applied, increasing the yield as I have no doubt ten bushels to the acre to what it would have been without the ashes. The next season similar ashes were applied to a flat piece of heavy clay soil, and the effect was not in any perceptible manner, beneficial. I have also applied barn-yard manure when the benefits were great, and subsequently used it on the same fields when the reverse appeared to be the result. In applying the ashes, the variation was without question in the soil. In the use of the barn-yard manure, in the season. A knowledge of all these attending variations is necessary then to enable a true theory to be introduced in regard to the value of all fertilizing appliances, nor in less degree is the need of their being known in the different modes of cultivation as given by different persons; and for want of true judgment in estimating these variations of soil, situation, season, &c., has arisen the controversy of deep and shallow plowing. So far as near 20 years travel (metaphorical only in degree) between the plow handles, qualifies to determine, it is better for me not to plow clay soil (with under strata of clay with lime pebbles intermixed,) in the spring much or any deeper than former plowings, unless I except for oats. But the case is different in the fall; then I want to get down. On gravel I should suppose different methods would be proper.

Last winter I plowed some fifteen acres of clover sod and weeds about eight inches deep, being about two inches deeper than it had been done by the former owner. The corn is now, (23d of 6th mo.,) nearly waist high on the average, while spring plowing in the same field is far short, though planted one day earlier and about same depth. On the fall plowing the corn stood well, while on the spring plowing fully half was cut by the worms. Former years have given similar results, but it is not always the case. But because the doctor did not cure friend Jones' wife, do we any the less send for him when sick? Why then we ought to plow deep (clay land)

in the fall, if we want a good crop of corn. Such at least is the result of my own experience. If the crop of grass plowed in be pretty heavy, I should not plow again, but if the grass be light so as not to hold the soil open I would plow shallow across the fall plowing in the spring. If the corn grows freely, would tend with one plowing with small bar-share plow throwing the furrow from the corn and cutting as close as possible without disturbing the hill; then plow in like manner the other way with the same, or if the ground be mellow with shovel-plow; and then throw the dirt back each way, cleaning out the middles with the shovel plow. In good soils this will be found sufficient unless previous crops have furnished the soil with a goodly portion of noxious seeds, in which case more work may be necessary. Heavy lands will also most likely require more.

1st mo. 30th, 1856. Since the above was penned the crops are all harvested. The ground plowed in the fall yielding from 60 to 80 bushels per acre, and that plowed in the spring perhaps as much as thirty, and very little difference in soil, it being in the same field as five acres of that plowed in the fall and adjoining the other ten.

Another field of eight acres, timothy and blue-grass sward, was plowed in the spring, and though some of it was good, the average was about thirty bushels per acre. It had been in meadow several years, and was considered as favorable to a "right smart chance" of corn, the most so of any part of the farm, and it received double the cultivation of the other. The ten acres was slightly harrowed before planting, and plowed three times after, with no manure, except feeding twelve or fourteen hogs the fall before in it; and the yield was over 800 bushels of shelled corn. That no misunderstanding arise I will state the method of measuring. A barrel is filled with ears and then shelled (not the barrel but the corn,) and carefully measured, and then the wagon load is measured by the barrel, and corn in the field is measured by the wagon, thus we approximate to the yield.—R. HATTEN, Warren Co., O.

CHARCOAL FOR SWINE.—It is not perhaps generally known, that one of the best articles that can be given to swine while in preparation for the tub, is common charcoal. The nutritive properties are so great that they have subsisted on it without other food for weeks together. Geese confined so as to deprive them of motion, and fattened on three grains of corn per day, and as much coal as they can devour, have become fattened in eight days. The hog eats voraciously, after a little time, and is never sick while he has a good supply. It should always be kept in the sty, and be fed to the inmates regularly like other food.

HORSE RADISH.

As a condiment at the table, this root is well known, and favorably received both by the palate and for its beneficial effects in assisting digestion.—During late years in some localities, it has become a crop of no mean importance, being cultivated by the acre and sold to pickle manufacturers, and for city use. Any part of the root will grow, and these do to plant, but the largest and best roots are obtained by using the crown of the plant only, with an inch or two of the root attached, as these come up uniformly with a single straight stem, while other portions seldom do.

To be a profitable crop the soil requires to be deep and tolerably retentive. A small space is sufficient to grow enough for family use, and all who lay any pretensions to having a kitchen garden should grow it. For this purpose the soil should be trenched not less than two feet deep, and except on very rich soil, plenty of manure worked in with it. After getting the surface smooth and even, mark off rows, eighteen inches asunder, and by means of a large dibble, make holes sixteen inches deep, one foot apart, drop the set into the bottom and fill up with fine earth, rotten leaves, or the vegetable matter from woods is excellent for the purpose, as the shoot in its growth through the soil meets with no obstructions, and hence forms a beautiful clear stick. It is ready for use the second season after planting.

In taking up, a trench is commenced the depth of the roots, and roots successively extracted, taking care to pick all out, as the smallest piece will grow again. Some leave in pieces for a future plantation, but it is not so well, besides which a change of soil is desirable. A small piece should be planted each year, to keep up the supply. A crop of radishes, lettuce or the like, can be taken off the ground the first season without injury.

For extensive planting, of course the soil is plowed, and the holes filled with common soil made fine.

The flavor of the root is deteriorated if allowed to get dry; so for winter, they should be kept in sand in the vegetable cellar with the other roots. The planting may be done early in the spring, or in November.

FOR USE.—The root is scraped or grated fine, and soaked in vinegar, and served with meats, particularly beef, fish, &c. Thus pickled and preserved in tightly sealed bottles, it will last a long time. Buist says: "Its medicinal effects are to stimulate the glands to activity, and on account of its warm nature it is good in numerous cases arising from cold and viscid juices. The root, when fresh grated, assists digestion; it may therefore be properly employed as a condiment at the table. It is also considered of great service in rheumatic cases, and on the first appearance of scurvy."—E. SANDERS.

THERE are so many ways for bringing up exhausted meadows, or those not exhausted of their fertilizing qualities, yet turf bound and not yielding longer good grass crops, that it is difficult to prescribe in such a case as this without a knowledge of more circumstances.

The remedy which most naturally suggests itself is plowing, planting with a hoed crop, manuring and seeding down. If unsuited to a winter grain, the case would probably seldom occur when land flooded in early spring, might not be seeded down later in the season, and do well.

A thorough harrowing, seeding and rolling, or the use of the harrow alone, produces a good effect.—This treatment loosens the sward, permits a circulation of air and moisture, and gives a new start to the old roots, which had become partially lifeless from the thickening and filling up of the soil with roots.

To produce the same effect it has been recommended to use the lifting sub-soil plow. This instrument, which most have seen for a year or two at our cattle shows and fairs, consists of a flat blade, trowel-shaped, thickened in the central part, and connected by a thin, but strong perpendicular standard with a beam. It is said that excellent effects have been the result of running this at intervals of four to six feet through turf bound meadows. When run deep all the soil is disturbed, and a circulation of air and moisture induced, which enables manures to take effect, vegetable matter in the soil to decompose, and gives fresh vigor to the old sward.

We hope to know of the thorough trial of this instrument, and have no doubt that in many cases it will be found to work very desirable results at a slight cost.

Dressings of ashes, leached or unleached, of Bones, Plaster or Guano, might each be of advantage. A good top dressing of unleached ashes might produce as good an effect as either of the others, and probably at least expense, though we would recommend a trial to be made of several top dressings, each on a small scale and on measured and contiguous patches.

NITRATE OF SILVER FOR BURNS.—J. Wiltbank, M. D., in a communication to the Medical Examiner, Philadelphia, states that he has used nitrate of silver in solution as an excellent application for burns and scalds. He states that its results have gratefully surprised him. "It furnishes a complete protection to the inflamed surface, subdues the pain, arrests the serious discharge, changes the character of the inflammation, and promotes a speedy cure."—From twenty to forty grains are dissolved in an ounce of water, and this is applied with a camel's hair pencil over the whole surface of the burn.

BLOOD MANURES.—The English Agricultural Gazette thus describes the operations of the "Cyanic Manure Company," of London, in utilizing animal blood for fertilizing mixtures. The manner in which it is used is as follows:—"Bone dust and crushed coprolites (fossil manure) are placed in a long tub, along the central axis of which is the shaft of a revolving agitator—so many casks full of blood are poured in over the bones, and well mixed by the arms upon the working shaft. Sulphuric acid is added to the mixture which boils and effervesces under the action of the vitriol on the bones and blood, and after thorough commixture for about ten minutes, the liquid mass is allowed to escape through the opened end of the vessel, and it runs in a heap upon the earthen floor, where, as it cools, it hardens and dries. Some 16 or 18 large vessels full of this mixture are thus poured out in the course of the day, forming at the end of it a large mass of probably 40 or 55 tons of manure. It soon hardens, and in a day or two is turned over with the spade and broken small, and is found already dry enough for drilling. This is the turnip manure of the company. In their wheat manure the same materials are used in different proportions, and a larger quantity of blood being used, artificial heat is needed to dry the resulting compound. The turnip manure contains about 2 or 3 per cent. of nitrogen along with 16 per cent. of soluble phosphate of lime: the wheat manure contains about 7 per cent. of nitrogen, and phosphate is reduced to 10 per cent. Several thousand gallons of blood are used daily in these works."

HEADING CABBAGES IN WINTER.—A number of our agricultural exchanges give the following method of making cabbage head in winter, which we hope is correct:—

"Select a suitable spot in a garden or field, six feet in width, of any desired length, free from standing water; run a furrow the proposed length of your bed, and throw a back furrow upon it. This double furrow will form a side wall of your cabbage house. In the trench stand your cabbages on their roots, leaning towards the furrow at an angle of 40 to 45 degrees. Let the next furrow be thrown upon the roots and stalks of the cabbages, and another row be placed in the trench made by the second furrow; thus proceed until your six feet of width is planted; then let the last furrow be a double one—making the other side wall about the height of the cabbage head. Through the whole length of the middle of the patch lay rails lengthwise, supported by crutches, at the height of about two feet from the cabbages; this will form the ridge of the cabbage house. Lay light brushwood from the side walls to the ridge pole;—then throw on salt hay, or bog hay, or straw two

inches in depth. As the cold weather advances throw on dirt till you have a depth of say six or eight inches, or even more when the winters are severe, and finally spank the dirt roof with the flat of a spade until it will shed the rain. Fill up two ends of your house in the same manner, leaving only small air holes of a foot or two diameter, which may be closed with hay. The length of the house should be on a north and south line.

In the early spring you will find your most unpromising plants have heads of their own, and all will be thriving and fresh."

COFFEE CULTURE AND THE SCENERY OF BRAZIL.

We make the following extract from Mr. Ewbank's very interesting "Sketches of Life in Brazil," noticed in the Co. GEN'L., last week:—

We next witnessed the processes by which coffee on this estate is prepared for market. I think I have remarked that the ripe fruit is not unlike a cherry in shape or color. The skin, rather thick and tough, incloses *two* of the grains or seeds known as coffee. The old procedure, still the prevailing one, is this: When the berries have acquired a deep red, they are picked into bags, thrown into heaps, and spread out on level spots of ground to dry in the sun. In front of a chacara, on the face of a mountain full seven hundred feet above us, I observed, as we came along, the entire surface of a detached table-rock, presenting several thousand superficial feet, covered with them. When the skins become shriveled, hard, and almost black, they are pounded in wooden mortars. The blows break the skin without injuring the tough grains. By sifting, the latter are separated and again laid out to dry, till a pellicle enveloping each grain is deprived of moisture, when a fresh appeal to the mortar and winnowing-fan leaves them ready for sale or consumption.

The improved mode consists in drying the grains on wooden trays or beds of slate, by which an earthy flavor, acquired when dried on the soil, is avoided; and in the introduction of two mills for removing the outer and inner envelopes. The chief feature of the first mill is a horizontal copper cylinder, whose surface is roughened after the manner of a rasp. It revolves against a board, between which and the teeth space is left for the grains to pass, but not the husk. The grains drop into water, and are left to soak twelve hours, by which a mucilaginous matter is removed, and the thin parchment film inclosing each grain softened. They are spread out in trays to dry. I counted two hundred of these in one row, covering a space 700 feet by 15.

When completely dry, the grains are taken to a mill resembling those used for grinding plaster, ex-

cept that the two vertical rolling discs are wood, six feet in diameter, and five inches thick. Their light weight suffices to break and abrade the pellicles without injuring the grains. After being subjected to a fauner, they are put up in bags for exportation.

ONE WAY TO CONSTRUCT A MANURE YARD.

A CORRESPONDENT of the Germantown Telegraph, gives the following directions, which furnish some good hints; though in all directions for preserving manure, we advise to avoid fermentation as much as possible. Let the most of the rotting or decay be done under the soil, so that the escaping gasses may be preserved. The writer says, "All yards designed for composting manure, should be concave, and covered with some substance of a solid and indurated character to prevent the infiltration of the liquids, which are the most valuable portion of all substances of a fermentable nature, used for manure. A very valuable article for this purpose, is found in the concrete, made by mixing hydraulic cement with sand, lime, wood ashes and clay, one part of the cement to one part each of the other ingredients, and allowing it to remain in a heap several weeks before using it. The admixture of the components will be more thorough if the mass be turned daily, and carefully worked as mortar is worked for plastering.—This will fine it, and render it more plastic and unctuous, and also increase considerably its proclivity to harden when applied. The surface which is to receive it should be perfectly smooth; all stones and other similar substances should be carefully removed, and the concrete thrown on and evenly spread by means of a float, or some other instrument which will lay it uniformly and firmly upon the floor. A good workman will put down several scores of yards in a day, and finish it off. A yard of twelve feet in diameter, should have a central depression of nearly three feet, and be occupied by a tank capable of containing from twenty to forty hogsheds, well cemented, and furnished with an efficient pump. If the soil is of a very light and sandy character, it will be well to spread over it a stratum of clay mixed into a mortar by the addition of fine gravel and water. This hardens eventually into an extremely indurated and impervious substance, which furnishes an excellent preparation for the cement, and prevents all possibility of the liquid matters straining into the soil. The top of the tank, or reservoir, should, in all cases, be considerably elevated above the surface of the yard, and provided with a floor, from six to eight feet square, to facilitate the working of the pump. When the floor is filled with materials, the water is thrown over the surface by means of the pump and a system of troughs, conducting to every segment of the circumference: and this should be done as often

as twice or thrice each week, to insure the requisite degree of humidity of the mass, and facilitate the fermentation of the manure. Of the method of filling the yard, I will speak more particularly as I proceed. Over this yard, there should be erected a circular roof, supported by posts so arranged as to admit of the spaces between them, on the circumference being closed up, to prevent the ingress of snow during winter. This will obviate the possibility of the yard being flooded by protracted and copious rains, which, instead of accelerating decomposition, tends greatly to retard it. It will also protect the decomposing mass from the deteriorating effects of the atmosphere. A ventilator, constructed on the apex of the roof, will serve to pass off the effluvia which emanates in hot weather, from all decaying substances, unless prevented by the use of absorbents and fixers, such as gypsum, charcoal, sulphuric acid, and other similar matters. These are cheap, and should always liberally unite in the formation of all composts of whatever character, and for whatever uses designed.

Assuming the basis of the compost to be clay, the filling in should proceed as follows: The clay being dumped down at the edge of the floor, a stratum four inches deep should be spread over the entire surface, care being taken to minutely pulverize the lumps and render it as fine as possible, that it may be the more readily and thoroughly incorporated with the other ingredients, and the manure, when mixed, be as homogeneous as possible. On this layer, there should be placed a stratum of muck of the best quality, four inches thick, covered with a thin sprinkling of caustic lime, in lumps; then a stratum of chip manure followed by green vegetables, mixed with caustic lime—the latter stratum being from two to three feet deep, and covered with six inches more of clay. Bone dust, gypsum, charcoal, nitrate of potash, sulphates and wood ashes, in equal relative proportions, should be mixed and spread evenly over the surface, and the deposition proceed in the same way till the same is completed. It should now be wet down, and suffered to remain till fermentation becomes active, when a sprinkling of dilute sulphuric acid should be applied, and charcoal dust, soot and gypsum sowed over the entire surface to arrest absorb and fix the gaseous exhalations, the escape of which, into free space, greatly diminishes the value of the manure. From three to four weeks should elapse before cutting down, an operation which should be commenced on one side, cutting from the surface through to the bottom, throwing the whole into a heap on one side. When all has been turned the whole should be again returned to the floor, leveled and wet down by water from the tank, and kept moist, but not saturated. A few turnings during the season will be sufficient. The addition of other substances is permissible, and these may be with safety added as occasion, or the effects to be produced, require.

COFFEE, ITS COST AND CULTURE.

It is believed by many that coffee can be cultivated in some of our southern States as successfully as in Brazil, Java, and Jamaica; if so, it is high time that some of our planters were entering upon its culture, as it costs our country no less than \$15,500,000 annually for the beans of this plant.

The coffee tree lives to a great age provided that the land is kept well drained. The trees begin to bear when three years old, and is at its full bearing when seven years old. The tree is allowed to grow in height from six to seven feet; the top branches are pruned off when the tree is five years old, so that by the time it is seven it resembles a spread umbrella. Each branch droops downwards, and thus gives the pickers a good chance to pick the berry. The coffee tree in Brazil bears two crops each year, the large crop in the spring, and the small one in the fall. The first crop is picked when the berry is red, resembling a cherry. The second crop is in general small, and allowed to remain on the tree until fully ripe and dry. This crop, cured in the husk, is far superior in quality, and is called "pearl coffee."—The blossom is beautiful, small and tender. It remains on the tree from three to four days. If the weather is warm, with showers, during those few days, the crop is sure; if cool at nights, it often fails. When the berry is taken home from the field it is carried to a mill house. The mill consists of three small rollers. The berry is put into a hopper, and a constant stream of water falls on the rollers during the time the mill is at work. By this process the outside hull is taken off and the berry is separated from it, and the coffee falls into a brick tank, where it is washed perfectly clean, and then put on a place covered with tile or brick raised in the centre that the water may drain. It is then taken to the curing loft, where it is turned four times a day until the hull is crisp and dry. Then by putting it through large fanners the inside hull comes off, and leaves the berry ready for hand-picking for market.—*Scientific American*.

THE METALS.—The ancients knew but seven metals—gold, silver, iron, copper, mercury, lead and tin. Antimony was first discovered by Basil Valentine, in 1490, and that by accident, while following his alchemical pursuits. Bismuth and zinc in 1530;—while from 1733 to the present period there have been found no less than forty-nine new metals, by chemical research. These are known to be distinct in identity and characteristics from each other.

The Philadelphia Ledger says, that the \$15,000, the sum required to be raised to secure the exhibition of the National Agricultural Society for that city, has been contributed.

PRUNING FRUIT TREES.

In the present state of horticultural knowledge it is about as important to tell the owner of an orchard, seasonably, what he should not do, as what he should. Much skill as it requires to plant a tree, it requires still more to prune it so as to help its growth and fruit bearing. Fortunately for the nursery-men, there is so little skill in planting, that a majority of the trees removed from the nursery never call for pruning. The sunbeams of their first season remove every redundant twig with a thoroughness that the most rabid pruner might envy. A small sample of undersized bean poles is the autumn inventory of what went upon his plantation in the spring as a splendid lot of the choicest fruit trees, purchased at one dollar each, and richly worth two. These, of course, will not want further pruning. But you have an old orchard, with some dead limbs and a thick, heavy growth of sprouts, and so much top that there is no chance for the sun to get in to ripen the fruit, what is to be done with it? Do not infer that because you have a keen-edged knife and a sharp saw, that the best use you can make of them is to go in to the apple tree tops with them in April. The truth is, February, March and April, are the worst three months in the year for this purpose. Lay your pruning tools upon the shelf for the present, and walk with us to your neighbor's orchard. This was pruned last April. You see that many large limbs were removed, and that the old wood is now nearly as black as if it had been painted, and that a long black stain extends far down the amputated limb, greatly injuring as well as disfiguring the bark. Examine the wood closely and you will find it has already begun to decay. The whole tree has received a shock by this untimely pruning, and years will not repair the injury.

The best time for a general pruning is at the close of the first growth of summer, which is from the 15th of June to the 15th of July. Then the leaves will take care of the flowing sap, and all small wounds will be rapidly healed over. The large wounds may be closed by a coating of tar, thickened with brick dust, applied warm. Gum Shelac is good, but is more liable to peel off than the tar mixture.

Never cut a limb for the sake of using your tools. The tops of apple trees do not require severe thinning in our hot summers. Nature understands the wants of the tree often much better than the gardener who has had his training under the dripping skies of England. The thick limbs and foliage are needed to protect the trunk, the larger branches and the fruit. You will find your fairest specimens in the top of the tree, and partially shielded from the sun's rays by leaves. Very small limbs, a half inch through, that cross each other or that interfere with the symmetry of the top, may now be removed, but no general pruning should be attempted.—*American Agriculturist*.

CULTURE OF THE CUCUMBER.—Last spring a friend of mine and myself were planting cucumbers at the same time. I was planting mine, as is usual, in gardens, by mixing a small portion of stable manure with the earth, and raising the hill an inch or two above the surface of the ground. Observing it, he jocosely remarked, "Let me show you how to raise cucumbers." Never having much luck in raising them, I cheerfully agreed to his proposition. He commenced by making holes in the earth, at the distance intended for the hills, that would hold about a peck—he then filled them with dry leached ashes, covering the ashes with a very small quantity of earth. The seeds were then planted on a level with the surface of the ground. I was willing to see the experiment tried, but had no expectation of anything but a loss of seed, labor and soil. But imagine my astonishment, (notwithstanding a drier season was never known, and almost a universal failure of garden vegetables,) when I beheld vines remarkably thrifty, and as fine a crop of cucumbers as any one could wish to raise; and they continued to bear for an unusually long time. I will not philosophize on the subject—but say to all, try it; and instead of throwing your ashes away, apply it where it will be of use, and you will reap a rich reward.

Ohio Farmer.

VALUE OF GAS TAR AS A FARM PAINT.—I have seen several notices recently, of "the value of gas tar," as a "farm paint." I have used it for some time past, and consider it a most valuable article. It is certainly an excellent preservative of timber exposed to the weather, and can be used with great advantage, applied to carts, wagons, plows, gates, and indeed, all the "iron work" about the farm, which needs paint of any kind, to protect it from rust, and give it a neat appearance, being a good substitute for oil and lead paint. Its cheapness is a strong recommendation, and I doubt not it will ere long be freely used by the farmers, wherever it can be conveniently obtained. Its disagreeable smell is not a material objection, as it loses most of it, in a few days after it is applied, but it "dries slowly," which is the greatest objection I find to its use. Can you, or any of your correspondents, tell me how that objection may be removed? I have been told to stir a little "fresh lime" into it, before using, which remedy I have tried without success.

SAVE THE BONES.—The value of bones in almost any form, as a manure for field or garden, should induce farmers to save them for this purpose. In the winter especially, quantities might be gathered, to be broken in spring and mixed with compost, or applied directly to the soil.

WORTH KNOWING.—As the Rattlesnake is the most dangerous and poisonous reptile known to man in our southern climate, we might be the means of prolonging the life of some noble spirit—perhaps in the shape of a huntsman, by giving a simple, yet certain remedy for the bite of this dangerous monster.

As soon as practicable, procure a small quantity of what is called "Cuckle Bur," which may be found in large quantities in almost every Farmer's field; make a strong tea by boiling, and give the patient from a half, to a tea-cup full at a dose, every two or three hours, until he shall have taken three or four doses, as the case may require. A poultice of the same material applied to the wound acts like a charm. The same remedy applied to animals, will save them in every instance. The use of this weed might prove fatal under any other circumstances, as its properties are very powerful.

WAYS OF COMMITTING SUICIDE.—Wearing thin shoes on damp nights in rainy weather.

Building on the air-tight principle.

Leading a life of enfeebling, stupid laziness, and keeping the mind in a round of unnatural excitement by reading trashy novels.

Going to balls and parties in all sorts of weather, in the thinnest possible dress and dancing till in a great perspiration, and then going home through the damp air.

Keeping children quiet by learning them to suck candy.

Eating without half masticating the food.

Allowing love of gain so to absorb our minds, as to leave no time to attend to our health.

Following an unhealthy occupation because money can be made by it.

Tempting the appetite with niceties, when the stomach says no!

Contriving to keep in a continual worry about something or nothing.

Retiring at midnight and rising at noon.

Gormandizing between meals.

Giving way to fits of anger.

Neglecting to take proper care of ourselves when a simple disease first appears.

An exchange says: "A little child of our acquaintance was rendered seriously ill, last week, by chewing a handsome enamelled ball ticket, which its mother had given it to play with. For the benefit of those who do not know, we would state that the enamel on the cards contain arsenic!"

CORN CULTURE.

THE season has arrived when every farmer may find something to do by way of making calculations in regard to the crops which are to receive his care and labor for days and months to come. Every practical farmer and gardener knows perfectly well, that there is a great diversity existing between the different kinds of plants of the same species which he is accustomed to raise; and that his success or failure not unfrequently depends very much on his selection of some particular variety. He is not only to study the character of the soil, the wants and condition of the market, and the varied economy of husbandry as a mere farmer, but he has also something to do as a philosopher. He finds himself engaged in a business which is under the dominion of law, of order, and I may add, of sobriety too. One rule may be laid down as of universal application, and that is, *the variety to be produced must be adapted to the climate*, in order to insure success. In the production of a crop, there are many mere *circumstances* which present themselves as worthy of regard; but this is *law*—a law of nature. Its demands are imperative and must be obeyed, or its penalty is quite sure to follow. By special care and labor, we may do much to oppose, but can never entirely overcome, this inseparable barrier to innovation. And as the production of Indian corn admits of a wide range of climate, and as particular varieties only are adapted to particular latitudes, it becomes a matter of serious inquiry in the cultivator of this plant to know what variety is best adapted to this particular locality, so as fully to meet the demands of climate. As a general rule then, I would say, plant for a field crop those kinds, and those only, which are known to ripen thoroughly, previous to the ordinary occurrence of autumnal frost.

I say those kinds that ripen *thoroughly*, as there is room for some diversity of opinion in regard to the ripeness of corn. Those who are in the habit of raising the larger and later varieties, are often deceived in this respect. But when is corn ripe? First I answer negatively, not when it has merely acquired its growth. The ripening process then barely commences. And if at this period it should become frozen, the process of maturing the grain, and bringing it to perfection immediately ceases; and worse than that, the good qualities which it would have possessed, not being frost-bitten, are very much diminished; and the way is prepared for it to become, without special care to preserve, mass of putrefaction. It is in fact a comparatively worthless article. Nothing will thrive well

that is fed upon it, unless it be mould and rot. Of course the labor of producing it is nearly or quite lost. And how many a farmer has occasionally seen his hopes and prospects blasted, when no necessity was laid upon him for such an occurrence. A year like 1816 may not occur oftener than once in a century, and yet some farmers (?) will have frosted corn almost every year. When will they learn that this is not the effect of fate alone, but of fate in connection with folly! But again, corn is not always ripe when it has the external appearance of being so. As the sap of a tree, after having been elaborated, returns downward and gradually hardens into the perfect wood, so the ripening of corn must be a work of time; and that too, under circumstances which are adapted to produce such a result. If it has not become thoroughly ripened within that part of the season which is most favorable to its maturity, the grain will become less perfectly matured afterward, tho' it may barely escape injury from frost. It may cease to grow, and it may also ripen, apparently, with less than half the weight and nutriment which it is capable of acquiring. Lastly, corn is fully ripe when it has received, without let or hindrance, and in harmonious proportion, all those properties which go to constitute weight, size and nutriment. Corn is oftentimes large, without being heavy, solid or nutritious. It must abound in organic matter, such as starch, gluten, oil, albumen, fibre and sugar, and these in due proportions, or it is not a perfect grain. This perfection is attained only under favorable circumstances. Corn that is ripened out of season, does not often possess it.—Hence it is comparatively of less value.

From personal observation, I am convinced that many farmers suffer great loss, and in many ways, by the cultivation of the larger and later kinds of corn, such as rarely, if ever, in the true sense of the term, become ripe. Large stalks are known to make a much greater draft upon the soil than small ones, consequently the necessity is laid for a more liberal expenditure in manure in the preparation of the soil. If the farmer has his eye on the amount of fodder to be produced, I would contend that large stalks, ripened and harvested late in the season, are generally of less value than the smaller and earlier kinds, which, from ripening early, can be properly cured, and seasonably stored for future use. But I may have something to say about raising stalks at another time.

I close by respectfully suggesting to my brother farmers that they shall henceforth adopt such a course and cultivate such variety of corn as that

they may fairly hope to avoid the evils here complained of, and secure to themselves the satisfaction and profit of an abundant harvest of ripe golden ears.

CURTIS BLAKELY.

BRISTOL, April, 1856.

THE OAT CROP NOT AN EXHAUSTER— WINE, ETC.

EDITORS SOUTHERN CULTIVATOR:—I write for the purpose of endeavoring to correct what I conceive in my humble judgment to be an error in most farmers in supposing that oats is the most exhausting crop that they can put on their lands. This error arises in a great measure from not considering cause and effect. They find their lands impoverished after being sown in oats, and directly attribute the cause to the oats without reference to any other accompanying circumstances. Every observant planter at the South knows that erop or crab grass comes up after oats, and that the common hog-weed, as it is called, comes up after wheat or rye. It is the usual custom that as soon as the crop of small grain is removed from the land, the stock of cows, sheep, horses, mules and hogs are turned in to graze for the balance of the summer. The weeds that follow wheat or rye are not eaten by the stock, but shade the ground from the sun in the summer and is returned to the earth in the fall or winter. On the other hand, the stock constantly feeding on the crab grass leaves the surface exposed to the scorching rays of the mid-summer sun, and leaves no vegetable matter to be returned to the earth in the fall or winter.

If farmers would keep their stock out of their oat fields, and plow under the grass and stubble, as is done in their wheat fields (for the stock does not destroy the weeds in the wheat fields,) we would not hear so much about oats impoverishing the soil. I have sown oats on the same land four years successively, and by keeping out the stock (except hogs to eat the grain) and turning under the stubble and grass, have had a continually increasing yield, and the fourth crop was much the largest. I have two fields that I have planted alternate years, for five or six years, in corn and then in oats, with a decided improvement in the soil every year. I think it is not so much the oats as keeping the ground closely pastured down, that impoverishes it. The oats may be one cause, but the pasturage is much the greatest.

I differ with you somewhat in the manner of cultivating corn. You recommend deep tith at

the outset and shallow cultivation after. My rule is to plow deep at all times. I admit that it would be much better if the land could be so cultivated as never to break the corn roots. Most of the vegetable matter is near the surface, and there the mouths of the plant seek and it is impossible to plow so shallow as not to break most of the roots that take up nourishment, [?] and as they are obliged to be broken, I always wish to compensate the plant by giving it a deep light bed of earth in which to put out fresh roots, and it would surprise any one who has not observed it, in what a short time these new roots will be thrown out. I think that in a drouth the moisture arising from capillary attraction and condensation from the atmosphere by having a deep bed of loose earth, and also by the free admission of atmospheric air to the roots of the plant will more than compensate for the few roots broken by deep than shallow cultivation.

In 1848, about two weeks after I had laid by a field of corn, the crop grass came up in it very thick, and to destroy it without breaking the corn roots, (for the corn was then in roasting ear) I plowed most of the field very lightly with what are here called buzzard sweeps. About three or four acres of the same field I caused to be plowed very deep with long new plows. A very severe drouth immediately set in; the corn that was plowed deep remained green to the ground, while, that which was plowed with the sweeps, fired up to the ear. This has been my experience in the cultivation of corn since 1827.

My communication is drawing out to an unwarranted length, but as I want some information, I will state a few facts. Having more grapes in my garden last summer than I could consume, I gathered the ripe grapes, mashed them by hand, strained the juice through a towel and filled a five gallon demijohn with the juice, reserving some of the juice to keep the demijohn full. I tied a cloth over the mouth to keep out insects. On the fourth day I examined it and it was sour. It has made neither vinegar nor wine. Will some of our readers inform me why I failed? I am anxious to learn the process of wine making, as I am about setting out a vineyard at this time.

Yours respectfully, T. P. MILLER.

REMEMBER, the great rule in relation to animals holds perfect in its application to vegetables:—breed only from the best animals; defects and imperfections have always a tendency to propagate themselves, and are always, in a greater or less degree, transmitted.

THE AMERICAN POMOLOGICAL SOCIETY —SIXTH SESSION.

IN conformity with a resolution passed at the last meeting of this National Association, the Sixth Session will be held in Corinthian Hall, in the city of Rochester, New York, commencing on Wednesday, the 24th of September next, at 10 o'clock A. M., and will continue for several days.

Among the objects of this meeting are the following: To bring together the most distinguished Pomologists of our land, and by a free interchange of experience, to collect and diffuse such researches and discoveries as have been recently made in the science of Pomology—to hear the reports of the various State Committees and other district associations—to revise and enlarge the Society's Catalogue of Fruits—to assist in determining the synonyms by which the same fruit is known in America and Europe—to ascertain the relative value of varieties in different parts of our country—what are suitable for particular localities—what new sorts give promise of being worthy dissemination—and, especially, what are adapted to general cultivation.

The remarkable and gratifying progress which has been attained of late years in this branch of rural industry, is, in no small degree, attributable to the establishment and salutary influences of Horticultural and Pomological Societies. It is, therefore, desirable that every State and Territory of the Union should be represented in this convention, so that the advantages resulting from this meeting may be generally and widely diffused.—Held, as it will be, at a convenient point between the Eastern States and the Western, easily accessible from the South, and also from the Canadas, it is anticipated that the attendance will be larger than on any former occasion, and the beneficial results to the American farmer and gardener proportionally increased.

All Pomological, Horticultural, Agricultural and other kindred associations of the United States, and of the British Provinces, are requested to send such number of delegates as they may deem expedient; and nurserymen, and all other persons interested in the cultivation of fruit, are invited to be present, and to participate in the deliberations of the convention.

In order to increase as much as possible the utility of the occasion, and to facilitate business, members and delegates are requested to forward specimens of their fruits grown in their respective districts, and esteemed worthy of notice; also, pa-

pers descriptive of their mode of cultivation—of diseases and insects injurious to vegetation—of remedies for the same, and also to communicate whatever may aid in promoting the objects of the meeting. Each contributor is requested to make out a complete list of his specimens and present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable after its organization.

Packages of fruits and communications may be addressed as follows: "For the American Pomological Society, care of W. A. Reynolds, Esq., Chairman of Committee of Arrangements, Rochester, N. Y."

Delegates will please forward certificates of their appointment, either to the above, or to the undersigned at Boston.

Gentlemen desirous of becoming members of the Society and of receiving its Transactions, may do so by remitting to the Treasurer, Thomas P. James, Esq., Philadelphia, Penn., the admission fee of \$2 for biennial, or \$20 for life membership.

M. P. WILDER, President.

H. W. S. CLEVELAND, Secretary.

Boston, Mass., March 15th 1856.

CULTIVATION OF PLUMS.

IN most sections the cultivation of plums has been greatly abridged by the ravages of the curculio, and indeed the injurious consequences resulting from its insidious attacks, have been so great, that very many who had entered quite extensively into the enterprise, have been compelled to abandon it altogether. Whether there exists, at present, any efficient and reliable remedy for this evil, is a question admitting, perhaps, of some doubt. Still, by a proper system of cultivation, its effects may be greatly mitigated, certainly, and the farmer who is the possessor of suitable soil, and who can afford the requisite amount of attention, may derive no small profit from the cultivation of any or all the numerous varieties ordinarily grown upon our farms. The soil which appears to be the most genial to these fruits, is a light, deep and warm loam, approaching to sand, and reposing upon a porous substance of sand or gravel. It should be worked carefully, and enriched by durable manure, but never with such matters as will ferment strongly. A compost of forest leaves, clay and rotten wood, chip manure from the wood shed, leached ashes, lime, gypsum and salt, is much better than animal excrement, and if thrown into a heap the year previous to its application, and occasionally wet down with soap suds and urine

with a turning now and then during the season, to mix the materials thoroughly, it will operate with great efficiency, and induce a rapid and healthy growth.

Salt is perhaps one of the best of all known fertilizers for the plum. In its native state—that of the beach plum—it is always found in situations where it is copiously irrigated by salt water, and is there never infested by the evils which so greatly lessen its value in a cultivated state. Probably an occasional sprinkling of salt and water, made about as strong as the sea water is, and applied by an ordinary garden syringe, to the limbs and leaves, would tend somewhat to mitigate the evils resulting from the curculio, if it did not wholly prevent them. Washing the bark frequently with soap-suds, urine, or weak lye, and splitting the bark from the roots upward to the junction of the larger limbs, have a good effect. All green and immature fruit should be carefully destroyed as soon as it falls. It contains the egg of the fly which produces the curculio, as may be seen by inspecting it as it comes from the tree.

I think that very many who attempt the cultivation of plums, force them too vigorously. The pear blight, in my opinion, is attributable to the same cause. In old times when pears were set in apple orchards, there was no complaint as to their blighting. The disease was, indeed, wholly unknown, and has only been developed of late years, when it is thought that the forcing principle, so perniciously applied in our human “nurseries of knowledge, is equally desirable in accelerating the maturation of vegetables, and pushing “*Dame Nature*” ahead of herself, to the detriment of her more important characteristics and powers.

J. B. B.

Germantown Telegraph.

THE YOPON, OR SOUTHERN TEA PLANT.

CLASS 4. | Natural order, 95. | *Ilex Vomitoria*.
ORDER, 3. | *D. Ilicineae*. | *Yopon S. S Tea*.

Medical properties, *tonic, astringent*.

Forms a good beverage for the sick, particularly in fevers.

This hardy evergreen shrub is found coastwise on the Atlantic slope, from Albemarle Sound, North Carolina, to the Rio Grande in Texas, and perhaps as far north as the Gulf of California, on the Pacific slope. It delights mostly in the poor, dry, sandy points and headlands, among rocks and dreary glade-lands, and frequently on small creeks and rivulets. In the formation of that most un-

holy compound called chaparral, and which, to the muleteer and herdsman of Mexico and Western Texas, is so much in the way, so annoying, and so destructive to sacks, blankets, clothing, &c., the Yopon contributes, at least, a full proportion of scraggy hooks and irresistible snags.

The leaves of the Yopon, when collected in August or September, carefully dried in the shade, and put up in air-tight canisters, are, when made into tea of proper strength for table use, not inferior to the tea we find in market. Some people like it better, and certainly it exerts a less deleterious influence on the vital forces.

In the form of tea, it is a pleasant diaphoretic in sickness, and is peculiarly applicable to fever of all grades. In cases of fever attended with a dry skin and restlessness, it frequently acts kindly as a soothing diaphoretic. In many cases of slight billious disturbances, it is sufficient to put the patient in bed, with a hot rock wrapped in a damp cloth to his feet, with blankets or quilts over him sufficient to keep him comfortable, and let him drink freely of the Yopon tea, till he sweats the fever off.

In Florida, New Orleans, Mobile, and many other points along the Southern coast, it has been long known and esteemed by the Indians and poor people as the best remedy for yellow fever; hence its specific name, *Vomitoria*; relying upon it solely in the most aggravated cases, and many of them recovering. The unavoidable conclusion is, if the Yopon did not cure these cases, that there is no use for doctors; for they applied nothing else.—*Texas Telegraph.*

NEW MODE OF PLANTING SWEET POTATO VINES, IN LEVEL LAND OR IN BEDS.

EDITORS SOUTHERN CULTIVATOR:—On the 20th day of July last I commenced planting potato vines in the following manner; the ground planted, was rye stubble, badly plowed and harrowed, and very clayey:

I made furrows with a bull tongue plow four feet apart; laid two vines along the whole length in the furrow, then covered, with a plow, about three or four inches deep, running a furrow on each side. They soon began to come up, and, although the ground was dry and cloddy, made a very good stand, with the exception of two rows, which were planted with young and tender vines in the middle of the day, which were scorched by the sun before they could be covered by the plow. On the 18th of August, I bedded up three rows, (that is, broke out the middles) but the ground being too dry and

hard, I merely harrowed the balance to keep down the grass; a spell of wet weather setting in, caused the vines to run over the ground and they were worked no more.

On the 16th of November I commenced digging them; they yielded at the rate of fifty bushels per acre. The three rows plowed, yielded two to one of the others. In this manner they may be planted in level land or in beds, and at almost any time, unless the ground is very dry or too wet to plow. Cattle and horses prefer the dried vines to any other feed. J. F. ERNST.

Fayette Co., Texas, 1856.

OHIO WINE—VINE PROSPECT IN THE SOUTH.

ROBERT BUCHANAN, Esq., of Cincinnati, Ohio (who is well and favorably known as a successful vintner, and the author of perhaps the best American treatise on Grape Culture and Wine Making) has very kindly forwarded us a few bottles of his wines, as an indication of the present stage of the enterprise in Ohio. The brands sent us were "Sparkling Catawba," (still) "Catawba," and "Wine of the Schuylkill Grape," and, so far as we can judge, were all very excellent samples of pure and unadulterated wine—such as we hope soon to have in abundance in Georgia and other States of the South, if Grape culture is prosecuted with the spirit and perseverance which it deserves.

We are hardly prepared to give our readers a full or correct account of what has already been done among us in this direction; but we may mention that Mr. Axt—who is the practical leader of the new enterprise among us—has already established extensive Catawba Vineyards near Dalton, Crawfordville, Augusta and Washington, Ga.; at and near Montgomery, Ala.; in the upper portion of South Carolina, and perhaps elsewhere; and that our neighbors on the other side of the Savannah, Gov. Hammond, Mr. Lamar, and other gentlemen, have entered largely into the culture of the Grape, expressly for Wine Making. The writer has also many thousand vines of the different varieties (Catawba, Isabella, Warren, Scuppernong, &c.,) under cultivation, and intends devoting still more time and space to this most attractive and promising branch of industry, hereafter. Dr. McDonald, and our correspondent, "A. C." (both of Woodward, S. C.) have been long and successfully engaged in Grape Culture and Wine Making, on an extensive scale; and the Scuppernong Vineyard of Mr. Weller, of North Carolina, is too well known to need any description. The sample of

"Warren Maderia," sent us, last year, by our friend, Nelson, (from the vineyard of Mr. Leary, of Monroe Co., Ga.,) was pronounced by two of the very best connoisseurs in America, to be equal, if not superior to the finest imported article; and the trial of Axt's eight weeks' old "Still Catawba" last season, in this city, by most competent judges, was altogether satisfactory and encouraging.

We believe from all the lights before us, that more wine and of better quality can be made on a given quantity of land in the South, than in Europe or at the West, and that the Catawba is by far our most promising Grape for the purpose.—We must not, however, be confined entirely to this variety, as the Warren, and perhaps the Isabella may be found to produce wines which cannot be made from the former.—*Southern Cultivator*.

THE FLORIDA POTATO.

THE following account of a native root, which bids fair to drive the famous "*Dioscorea Japonica*" or "Chinese Yam," into the shade, is from the pen of Dr. Wm. F. Robertson, of Tallahassee, Fla.—Of this esculent root, he says:

"It grows in the sandy soil of our pine woods, near the Gulf coast, is perennial, with a climbing vine, and flower somewhat resembling that of the convolvulus or morning glory. It appears to be very prolific, the root or potato attaining a growth in the first year, of four or five inches in diameter and ten to twelve inches in length. A specimen before me has been planted about three years, and the root is more than thirteen inches in diameter, with numerous offshoots or radicles, and would probably weigh from thirty to forty pounds. The taste is quite palatable, resembling that of the Irish potato more than anything else. Swine are quite fond of it. It has never been cultivated as an article of food, but from its pleasant taste and prolific qualities, I should infer that it would prove a desirable addition to the list of our root crops. In their native or wild state, both the Irish and sweet potato were comparatively worthless and unproductive; but cultivation, like the wand of the enchanter, has transformed them in a wonderful manner, and we behold them in universal use, acceptable alike at the table of the rich and of the poor, and from their exceeding productiveness, carrying plenty where perhaps gaunt famine would otherwise carry off its thousands annually. May we not be permitted to hope something from this new species? * * They should be planted in a light soil, in drills, and about a foot apart, and suffered to run on poles."

CULTURE OF COTTON—CLOSE PLANTING, ETC

EDITORS SOUTHERN CULTIVATOR:—Your February number did not reach me until yesterday, at the same time your March number. In the former you ask for information or rather an article on cotton culture. It is now too late, nor do I feel willing to attempt it, yet I will offer a hint. I think you say somewhere, that there is nothing new in culture. Why sir, if drawing rows closer together and leaving more stalks in the row is not, comparatively speaking, new, I do not know what is. Many are falling into it. I saw, yesterday, some 90 acres of rich low ground plowed into 5 feet rows, land deadened 3 or 4 years. This land 10 years, aye 5 years since, would have been laid off at least 6 feet and many think 7 feet would be right. The owner plants for 120 bales; this is the first year.

But another suggestion. Plow deep is the rule—and the exception, make no furrow under the centre of cotton row. When planting an old water furrow turn two furrows into old furrow. Indeed, instead of laying off rows, turn a furrow on the earth, and again return and bed to it. Thus the bed is thrown upon a hard surface. This has been done hereabouts for years and many of us think it pays well. We do not desire the tap root to have such access to the earth, prefer it should meet with resistance.

I only ask, as usual, a trial. Many of our successful planters have tried it to their satisfaction, and never run a centre furrow. Neither of these are new here, but will be to many.

Yours truly,

M. W. P.

An old gentleman, over sixty years, always a farmer, seeing my rows laid off, asked me if I thought it right. I said to him I had to do so, when I changed rows, but did not at any other time. He remarked, cotton grows larger, joints longer, more wood, when on deep plowed beds, but was the reverse on hard beds. This is known to many here and many are changing. Land to improve should be plowed deep, but I doubt if good lands produce so much cotton. I plow middles deep, and then can cut roots if too rapid growth.

Edwards, Miss., March, 1856.

M.

It is very rare to find ground which produces nothing; if it is not covered with flowers, with fruit trees and grains, it produces briars and pines. It is the same with man; if he is not virtuous he becomes vicious. — *La Brangere*.

GRAFTING.

I HAVE always made my own grafting-wax of equal parts of rosin, beeswax and tallow, which I have been well satisfied with, as it is of a consistency that it can be used almost any fair day from the middle of April to July without any artificial heat, and I have never seen it drip and run in hot weather.

I have been in the practice for many years in preparing my wax in this way:—I take old cotton shirting or calico that tears easily, tear it into strips from one to two inches wide, from two to three feet long, and when my wax is hot dip or immerse the strips of cloth into the melted wax and hang them over the vessel to drain, and after they are cool roll them up as a surgeon does his bandages.

As the principal object in covering the wound is to exclude the air and water, and keep the parts lively and fresh, I think the wax being in and on the cloth is far better than to press the wax with the thumb into the interstices of the split which has a tendency to cut off and prevent the flowing of the sap to form the union of the parts.

After my scions are inserted, if the stock is large I take a wide strip and place one edge about one-eighth of an inch above the stock and bring it around so as to lap, tear it off and press with the hand over the top and sides, then I tear off a piece large enough to cover the top and come over the sides with a notch or rent in the side to accommodate the scions and press it snugly around the top which will make all proof against air and water. If there is any part of the split uncovered below the bandage, I tear off a small piece and stick it over it.

H. H.

NATIONAL FEMALE CHARACTERISTICS.—The French woman marries for interest, the English woman by custom, the German woman for love.—The French woman loves till the end of the honeymoon, the English woman all her life, the German woman eternally. The French woman conducts her daughter to the ball, the English woman to the church, the German woman to the kitchen. The French woman has wit, the English woman intelligence, the German woman sentiment. The French woman clothes herself with taste, the English woman without taste, the German woman with modesty. The French woman babbles, the English woman talks, the German woman chats. The French woman offers you a rose, the English woman a dahlia, the German woman a *veigiss mesu nicht*. The French woman excels by the tongue, the English woman by the head, and the German woman by the heart.

EXPERIMENT IN CUTTING WHEAT.

A PRACTICAL farmer in this State has sent to one of our rural papers two samples of wheat of the same kind, grown in the same field, but cut at different times. He states that one sample was cut on the 20th of July last, in a green state, when the crushed grain had the appearance of thick dough; the other sample was cut six days later in a ripe state, the ears drooping, and the grain firm and hard. Both samples remained in stack until the 17th of October. When the grain was threshed, it was found that the green cut portion was equally dry with the other; but besides that, the green cut grain weighed twenty-eight ounces per bushel more than that which was allowed to stand till it was quite ripe, and the former has been also found to produce a better sample of flour with one-twelfth less bran.

If we have any doubting readers, here is an experiment easily to be tested. Agricultural newspapers have for a number of years urged farmers to cut their grain before it is fully ripe and hard; but we believe the number who have adopted this plan is limited in comparison with the whole farming community. Besides the advantage in heavier grain, we think all will agree with us that it is a great advantage in a wet harvest, allowing a longer period to get in grain. Most of our readers will doubtless remember that last summer, just as the grain was beginning to color, we had most delightful and dry weather; and just as the grain was dead ripe, and the customary time for harvest was on hand, the rains set in and continued for a month or more, and the wheat was all more or less injured. Those farmers who took advantage of the plan of cutting in a soft state, had their grain housed before the wet weather, and of course could command the highest price for their perfect wheat. Thousands of dollars in the aggregate might have been saved to the farmers of this country, if they had taken "Time by the forelock," instead of letting Time drive them in their harvest. Have none of our readers a word of counsel for their brother farmers?—*Western Agriculturist*.

PEACH TREE BORER—TANSY.—We saw it stated, two years ago, in an agricultural journal that these pests could be driven from peach trees, by Tansy. We planted it at the roots of some ten or twelve trees, and not one of them have been disturbed, whilst others are injured badly. This spring we intend planting it around all.—*Newberry (S. C.) Sun*.

CARELESSNESS IN FARMING.

As in everything else, this is productive of great evil. But of all classes of persons who should be free from careless habits, it is the farmer. The seasons must be closely observed—the seed planted in the proper season—the requisite culture to the crops must be given at the right time, or it does no good—they must be harvested when ripe, or they are wasted or deteriorated. Manure must be constantly taken charge of. Barns, stables, wagon-houses, tool-houses, etc., should be kept neat, and every farmer should have a covering for his wagons, carts, implements, harnesses, etc.—There is no time lost by maintaining order on the farm, and in the buildings connected therewith.—Many farmers will leave a plow or a harrow in the field where he has last used it, until the rust has injured its value, and he thus loses more than to spend the time in putting it under shelter; besides nothing is made by such carelessness eyed in point of time, for when an implement is wanted, much time is wasted in hunting it, and too often it cannot be found at all.

Every farmer should have a tool-house, and a place in it for every implement, and everything should be kept in its place, unless in use, and the invariable rule should be to return it when done using it. Repairs must be made when needed;—fences must be righted; wagons greased; harness cleansed; horses curried, cows carded, and all of them fed at the right time.

These are small matters, but it should be remembered a man's life is made up of things apparently trifling in themselves, but when considered as links in the chain of cause and effect, they are of serious import. A minute is a very short space of time, but minutes make up eternity. An atom is inconceivably small, but an infinite number of atoms constitute the grand system of worlds known and unknown.

In agriculture there is probably enough wasted every year in the United States to keep all the poor and starving in our land in good healthy condition. A gentleman of keen observation informed us, that he had traveled through many of the Western States, and he was perfectly surprised at the carelessness displayed by farmers who had opportunities for knowing better. As a sample, one man had a Hussey's Reaper, for which he paid over a hundred dollars, and had kept it exposed to the sun and rain for a whole year, because he had no place to put it. Whereas an energetic man, for a trifling expense, could, in a few hours, have made shelter that would have secured it from the weather.

Great carelessness is too often displayed in keeping stock, not only in cleanliness, but in feeding and watering them. The truth is, the farmer must not be lazy or drunken, or in the habit of minding others' business and neglecting his own. We do not mean to say that a farmer should always be at work; by no means. There are duties as holy and as imperative as providing food for his wife and children; his own mind and theirs must be cared for, and improved and developed; but his attention to his business is just what will enable him to do it. If he neglects to improve the mind at the proper time, it is worse than to neglect his corn, his potatoes, his stock, or his fences; but he is not obliged to neglect them. A good body and a good mind, with the proper stimuli for both, should be the aim of every man, whether farmer or tradesman, merchant or lawyer.—*Norristown Olive Branch.*

CULTURE OF THE RASPBERRY.

THE raspberry requires a deep, rich, and humid soil, abounding in decayed vegetable matter. An old swamp thoroughly drained is the best soil to be obtained, but the raspberry will flourish and produce large crops on any garden soil, if well trenched and enriched with well decayed manure, tanners' scraps, old tan-bark, etc.

Partial shade is of advantage, especially for some of the tender sorts, but the plants must not be placed under the drip of the trees, as this tends to weaken the plants, and destroys the flavor of the fruit. If the soil has been well prepared previous to planting, it should not be disturbed with the spade during the existence of the plantation. The surface may be loosened annually with a rake or fork, and a top dressing of long stable manure applied. There are two sorts of roots to the raspberry, the one going down to a considerable length in search of food or moisture, the other running horizontally very little below the surface. It is from these latter the young plants or suckers proceed. When they are not required for sale or new plantations, they should be destroyed. The nutrient necessary for their formation will then be thrown into the fruit and canes which are to produce the crop of another year. When the surface roots are deprived of their suckers, they then become food-collecting roots, and that is the reason why they should not be disturbed.

Raspberries, like all other hardy plants, should be planted in the fall or early in the spring. The plants can be pruned at two seasons, early in September, or as soon as the crop is gathered, and in

the summer. The first pruning will be to cut away all the old wood and weak canes; some shorten the canes down to an equal length, but this should not be done, because the canes are not of equal strength; they should, therefore, be shortened accordingly.

Summer pruning consists in the removal of all the young shoots arising from the roots; also thinning out weak stems.

Most of the new varieties require protection during winter to insure a good crop. If the canes are bent down to the ground, some soil or pine boughs will preserve them. The old Antwerp, and Philadelphia, a variety of the Antwerp, require no protection, and yield fair crops annually.—*Western Agriculturist.*

CURE FOR STAGGERS IN HORSES.

EDITORS SOUTHERN CULTIVATOR:—I have received the December number for 1853, and not feeling disposed to do without the Cultivator, I enclose you one dollar for another year's subscription to your valuable paper, so please commence the year.

I noticed in the Cultivator an article on Staggers in Horses, and, always feeling an interest in that noble animal, I will give you a remedy that has never failed in Mississippi, when applied in time, which is as follows:—On the first symptoms of the Staggers, take two ounces of good English calomel and make three doses of it and mix with molasses; pull out his tongue, and, with a spoon, put it as far down as possible; in one hour, the same, and one hour more, the same; and in one hour after the calomel, give him one pint of castor oil and one pint of whiskey mixed and bleed freely at the nostrils from the start, and if anything will cure, this will. I never saw it fail.

I remain yours respectfully,

LEWIS Y. FOLSOM.

Gainesville, Hancock county, Miss., 1856.

DISTEMPER IN HORSES.

EDITORS SOUTHERN CULTIVATOR:—I conclude to send you a remedy for Distemper in Horses, and should you think it of sufficient importance, you can give it a place in your valuable journal:—Take three pounds of tobacco; put it into a pot, or some other vessel, and add one gallon of water; boil down to the consistency of syrup. When cool bathe the horse three times a day, commencing at the throat, down the neck, breast and fore legs.—Two or three days will effect the cure of the worst cases.

J. R. A.

EDUCATION OF MECHANICS.

THE mechanic whose mind is enlightened with scientific knowledge, has a much greater chance of being instrumental in improving the arts than the mere chemist or philosopher. While the mere philosopher is demonstrating principles and forming theories in his closet, and sometimes performing experiments, only on a small scale—the workman, in certain manufactories, has a daily opportunity of contemplating chemical processes and mechanical operations on an extensive scale, and of perceiving numberless modifications and contrivances, which require to be attended to, of which the mere scientific speculator can form but a very faint and inadequate conception. Being familiar with the most minute details of every process and operation, he can perceive redundancies and defects imperceptible to other observers; and, if he has accurate knowledge of the general principles on which his operations depend, he must be best qualified for suggesting and contriving the requisite improvements. As the mechanic is constantly handling the tools and materials with which new experiments and improvements may be made—observing the effects of certain contrivances, and of deviations from established practice—and witnessing the chemical and mechanical actions of bodies on each other—he has more opportunities of observation in these respects, and, consequently, is more likely than any other class of society to strike out a new path which may lead to some useful invention in the arts or discovery in the sciences. But if his mind is not imbued with knowledge, he trudges on, like a mill-horse, in the same beaten track, and may overlook a thousand opportunities of performing experiments, and a thousand circumstances which might suggest new improvements.

In short, in so far as chance is concerned in new discoveries and improvements in the arts, the scientific mechanic has a hundred chances to one, compared with the ignorant artificer, that, in the course of his operations, he shall hit upon a new principle of improvement. His chances of such results are even superior to those of the most profound philosophers who never engage in practical operations, as he is constantly in the way of perceiving what is useless, defective, or in any way amiss in the common methods of procedure. To use a common expression, "He is in the way of good luck; and if he possesses the requisite information, he can take the advantage of it when it comes to him." And should he be so fortunate as to hit on a new invention, he will probably enjoy not merely the honor which is attached to a new discovery, but also the pecuniary advantages which result from it.

We have, therefore, every reason to hope that, were scientific knowledge universally diffused among

the working-classes, every department of the useful arts would proceed with a rapid progress to perfection, and new arts and inventions, hitherto unknown, be introduced on the theatre of the world, to increase the enjoyments of domestic society, and to embellish the face of nature. No possible limits can be assigned to the powers of genius, to the resources of science, to the improvement of machinery, to the aids to be derived from chemical resources, and to the skill and industry of mechanics and laborers when guided by the light which scientific discoveries have diffused around them. Almost every new discovery in nature lays the foundation of a new art; and since the recent discoveries of chemistry lead to the conviction that the properties and powers of material substances are only beginning to be discovered, the resources of art must, in some measure, keep pace with our knowledge of the powers of nature. It is by seizing on these powers, and employing them in subserviency to his designs, that man has been enabled to perform operations which the whole united force of mere animal strength could never have accomplished. Steam, galvanism, the atmospheric pressure, oxygen, hydrogen, and other natural agents, formerly unnoticed or unknown, have been called into action by the genius of science; and, in the form of steamboats and carriages, voltaic batteries, gaso-meters, and air-balloons, have generated forces, effected decompositions, diffused the most brilliant illuminations, and produced a celerity of motion both on sea and land, which have astonished even the philosophical world, and which former generations would have been disposed to ascribe to the agencies of infernal demons. And who shall dare to set boundaries to the range of scientific discovery, or to say that principles and powers of a still more wonderful and energetic nature, shall not be discovered in the system of nature calculated to perform achievements still more striking and magnificent? Much has of late years been performed by the application and combination of chemical and mechanical powers, but much more, we may confidently expect, will be achieved in generations yet to come, when the physical universe shall be more extensively explored, and the gates of the temple of knowledge thrown open to all. Future Watts, Davys, and Arkwrights will doubtless arise, with minds still more brilliantly illuminated with the lights of science, and the splendid inventions of the present age be far surpassed in the "future miracles of mechanic power," which will distinguish the ages which are yet to come. But, in order to this "wished-for consummation," it is indispensably requisite that the mass of mankind be aroused from their slumbers, that knowledge be universally diffused, and that the light of science shed its influence on men of every nation, of every profession, and of every rank.

That the remarks of experienced artists and laborers may frequently lead to useful discoveries, may be illustrated by the following facts: A soap manufacturer remarked that the residuum of his ley, when exhausted of the alkali for which he employed it, produced a corrosion of his copper boiler for which he could not account. He put it into the hands of a scientific chemist for analysis, and the result was the discovery of one of the most singular and important chemical elements, iodine. The properties of this being studied, were found to occur most appositely in illustration and support of a variety of new, curious, and instructive views, then gaining ground in chemistry, and thus exercised a marked influence over the whole body of that science. Curiosity was excited: the origin of the new substance was traced to the sea plants from whose ashes the principal ingredient of soap is obtained, and ultimately to the sea water itself. It was thus hunted through nature, discovered in salt mines and springs, and pursued into all bodies which have a marine origin; among the rest, into sponge. A medical practitioner, Dr. Coindet, of Geneva, then called to mind a reputed remedy for the cure of one of the most grievous and unsightly disorders to which the human species is subject—the goitre—which infests the inhabitants of mountainous districts to an extent which in this favored land we have happily no experience of, and which was said to have been originally cured by the ashes of burnt sponge. Led by this indication, he tried the effect of iodine on that complaint, and the result established the extraordinary fact, that this singular substance, taken as a medicine, acts with the utmost promptitude and energy on goitre, dissipating the largest and most inveterate in a short time, and acting, (of course with occasional failures, like all other medicines) as a specific or natural antagonist against that odious deformity. It is thus that any accession to our knowledge of nature is sure, sooner or later, to make itself felt in some practical application, and that a benefit conferred on science, by the casual observation or shrewd remark of even an unscientific or illiterate person, infallibly repays itself with interest, though often in a way that could never have been at first contemplated.—*The Pen and Lever.*

Accuracy of language is one of the bulwarks of truth. If we looked into the matter, we should probably find that all varieties and modifications of conscious and unconscious lying, as exaggeration, equivocation, evasion, misrepresentation, might be traced to the early misuse of words.

Never make money at the expense of your reputation.

From the Tennessee Farmer.

RAISING INDIAN CORN WITHOUT TILLAGE AFTER PLANTING.

MESSRS. EDITORS:—By experiment I have arrived at some conclusions in regard to the culture of Indian corn, which I think of importance to farmers in the Southern States. I communicate them for the use of the public with great hesitation, because they are in direct variance with the received opinions on the subject.

Last spring I planted a small piece of poor ground—first breaking it up well. The rows were made three feet apart, and the stalks left about one foot apart in the drill. The ground had been very foul the previous year with crab grass. The corn was not well up before the grass began to appear. When the corn had about four blades, the young grass completely covered the ground, and the corn was turning yellow. I spread a small quantity of stable manure around the corn, and covered the whole ground three or four inches deep with leaves from the forest, taking care to do this when the ground was wet, and the leaves also, that they might not be blown away, and to leave the tops of the young corn uncovered. In ten days there was not a particle of living grass to be found, and the corn had put on that deep bluish green which always denotes a healthy condition of that plant.

From the day the corn was planted until after the fodder was pulled and the tops cut, nothing more was done with it; and the result is a product at the rate of forty-two bushels to the acre.

I noted in the course of the summer the following facts: First, The corn treated thus was always ahead of some planted alongside of it, and treated in the usual way. Second, It ripened at least ten days sooner than other corn planted at the same time.—Third, During the hottest and driest days the blades never twisted up, as did other corn in the neighborhood. Fourth, In the driest weather, on removing the leaves, the ground was found to be moist to the sun ace, and loose as deep as it had been first broken up. Fifth, The heaviest rains had scarcely any effect in washing away the soil or making it hard.

It certainly will require less labor to produce corn in this way than in the usual mode. And even if it required more, we have the consolation to know, that while by the ordinary method every hour's work is an injury to the land, by this mode it is making it better; for few things are better manure than the coating of leaves put on in summer, if they are plowed in during the winter or spring following.

Those who think the plan worth attention, may easily make an experiment with an acre or two, and

note carefully its progress. If they are satisfied after the trial that there is anything in it, to extend the operation will not be a difficult matter.

There is one very important result that must follow the success of this plan on a large scale, and it was with an eye chiefly to that result that my experiment was undertaken. Constant excuse for not improving our land is, that where cotton is grown, the time necessary, first to cultivate the growing crop properly, next to gather it, and then prepare for a new crop—attended frequently by inclement weather—leaves the planter no time to collect and prepare manure. My plan will put an end to that excuse at once; for whenever leaves are to be had, half the time usually bestowed on working the corn crop in the usual way spent in gathering leaves and putting them on the ground instead of plowing it, may in a short time accomplish everything that can be desired in the way of manuring.

Why may not the same process answer in the cultivation of cotton? If it keeps the ground soft and moist, and prevents the growth of grass and weeds in a corn crop, it will surely have the same effect with cotton, and be the means, further, of preserving the cotton, when the bolls open, from all the injury it sustains from the soil in wet seasons. This is, however, but speculation. Let it be tested by actual experiment.

L. T. J.

West Tennessee, April, 1836.

THE YORKSHIRE COW.

This cow, which now almost exclusively occupies the London dairies, is an unanswerable proof of the possibility of uniting the two qualities, fatting and milking, perfectly, but not at the same time: they succeed to each other, and at the periods when it suits the convenience of the dairyman that they should. Years ago the Yorkshire cow was, compared with other breeds, as great a favorite in the London market as at present. She yielded more milk, in proportion to the quantity of food consumed, than could be obtained from any other breed;—but when the dairyman had had her four or five years, she began to fall off, and he dried her and sold her. It took a long time to get much flesh upon her; and when he calculated the expense of bringing her into condition, he found that his cheapest way was to sell her for what she would fetch, and that seldom exceeded \$25.

By degrees, however, the more intelligent of the breeders began to find that, by cautiously adopting the principle of selection—by finding out a short-horn bull whose progeny were generally milkers, and crossing some of the old Yorkshires with him,—but still regarding the milking properties of the dam, and the usual tendency to possess these qualities in

the offspring of the sire—they could at length obtain a breed that had much of the grazing properties of the short-horn in the new breed, and retained, almost undiminished, the excellencies of the old breed for the pail. Thence it has happened that many of the cows in the London dairies are as fine specimens of the improved short-horns as can possibly be produced. They do not, perhaps, yield quite so much milk as the old ones, but what they do yield is of better quality; and whether the dairyman keeps them a twelvemonth or longer—and this is getting more and more the habit of these people—or whether he milks them for three or four years—as soon as he dries them, they fatten as rapidly as the most celebrated of the high-bred short-horns.

We give a fair specimen of one of these cows:—the character of the Holderness and the short-horn beautifully mingling. A milch cow good for the pail as long as wanted, and then quickly got into marketable condition, should have a long and rather small head; a large-headed cow will seldom fatten or yield much milk. The eye should be bright, yet peculiarly placid and quiet in expression; the chaps thin, and the horns small. The neck should not be so thin as common opinion has given to the milch cow. It may be thin towards the head, but it must soon begin to thicken, and especially when it approaches the shoulder. The dewlap should be small; the breast, if not so wide as in some that have an unusual disposition to fatten, yet very far from being narrow, and it should project before the legs; the chine, to a certain degree fleshy, and even inclining to fulness; the girth behind the shoulder should be deeper than it is usually found in the short-horn;—the ribs should spread out wide, so as to give as round a form as possible to the carcass, and each should project farther than the preceding one to the very loins, giving, if after all the milch cow must be a little wider below than above, yet as much breadth as can possibly be afforded to the more valuable parts. She should be well formed across the hips and on the rump, and with greater length there than the milker generally possesses, or if a little too short, not heavy. If she stands a little long on the legs, it must not be too long. The thighs somewhat thin, with a slight tendency to crookedness in the hock, or being sickle-hammed behind; the tail thick at the upper part, but tapering below; and she should have a mellow hide, and little coarse hair. Common opinion has given to her large milk-veins, and although the milk-vein has nothing to do with the udder, but conveys the blood from the forepart of the chest and sides to the inguinal vein, yet a large milk-vein certainly indicates a strongly developed vascular system—one favorable to secretion generally, and to that of the milk among the rest.

The last essential in a milch cow is the udder, rather large in proportion to the size of the animal, but not too large. It must be sufficiently capacious to contain the proper quantity of milk, but not too bulky, lest it should thicken and become loaded with fat. The skin of the udder should be thin, and free from lumps in every part of it. The teats should be of moderate size, at equal distances from each other every way, and of equal size from the udder to nearly the end, where they should run to a kind of point. When they are too large near the udder, they permit the milk to flow down too freely from the bag, and lodge in them; and when they are too broad at the extremity, the orifice is often so large that the cow cannot retain her milk after the bag begins to be full and heavy. The udder should be of nearly equal size before and behind, or, if there be any difference, it should be broader and fuller before than behind.

Youatt on Cattle.

THE HORSE.

POINTS OF A GOOD HORSE.

HE should be about fifteen and a half hands high; the head light, and clean made, wide between the nostrils, and the nostrils themselves large, transparent, and open; broad in the forehead; eyes prominent, clear, and sparkling; ears small, neatly set on; neck rather short, and well set up; large arm or shoulder, well thrown back, and high; withers arched and high; legs fine, flat, thin and small boned; body round and rather light, though sufficiently large to afford substance when it is needed; full chest, affording play for the lungs; back short, with the hind-quarters set on rather obliquely. Any one possessing a horse of this make and appearance, and weighing eleven or twelve hundred pounds, may rest assured he has a horse of all work, and a bargain well worth getting hold of.

CARE OF HORSES.

No horse can endure labor all the time. A few months in pasture, after being high fed and worked for several years, will renew his energies, as stated periods of rest and recreation will preserve the vital energies of man unimpaired through a long life; and by a wise law of Providence, which is as beneficial to beast as to man, a horse will do more labor in the six days than if he were worked the whole seven.

In reference to the peculiar excellence of the horses of New York, I might say, I have driven a pair two hundred and forty miles in three days, or eighty miles per day, without injury. Among the many hundreds, and perhaps thousands of teamsters in my employ, I had a slow-moulded man by the name of Dana Brown, who drove for some ten years, and always drew the largest loads in the same time,

and with less fatigue to his horses, than any other driver I ever knew. His horses would look better on the same food than those of any other, and they always appeared in good condition, while those in charge of others gave unmistakable evidence of improper usage. Forty, fifty, and even sixty hundred weight has been drawn over the Catskill mountains with one pair of horses; and I am only doing him an act of justice to say, that he never wore out a lash, and hardly a snapper, in the whole time.—Whilst other teamsters had sick horses, his were always in good condition. The whole number of teams I had in one year averaged, in the three working days, 2600 pounds to Prattville, and 3000 pounds to Catskill, a distance of thirty-six miles, making about two and a half millions of pounds in all. I mention these facts as illustrating the great benefit of a good management of horses, and of roads.

AGE OF HORSES.

With regard to the natural longevity of a horse, nothing can be said with certainty. They have been known to live thirty or forty years, and in some instances even sixty years; but ill usage frequently destroys them before they are nine or ten. I think that, under ordinary circumstances, fourteen years would be a fair average.

BREAKING.

Too much importance cannot be placed upon the judicious breaking and management of this noble animal. It should be like that of a child; by no other means can a horse be reduced to a cheerful and ready obedience. A sullen and dogged submission will result, it is true, from cruel and brutal treatment, but a prompt and eager response to the wish of a rider can be obtained only by kindness. I think there are few horses sulky by nature, and I believe most are made so by drivers who are blessed with far less brains than the horse himself.

CHANGE OF BLOOD.

There is one thing to be remembered, however, in obtaining good horses, which must receive attention, or the stock will inevitably depreciate. It is, that the same stallion should never remain in the same locality more than four or five years at the farthest. The constant mingling together of the same blood in the human family, tends to both physical and mental depreciation, as is peculiarly illustrated in some of the old crowned heads and aristocracy of Europe.

FARMERS, make a proper use of your time, and remember that when it is once gone it can never be recalled.

WORTH makes the man—pride, the fellow.

OSAGE ORANGE HEDGING.

THE following article is from the pen of a gentleman who has been very successful in making hedges with the Osage Orange. It is well worthy the careful perusal of those who contemplate planting hedges.

THE SOWING.

"First, it will be necessary to get good seed; but as the buyer cannot know much about it in advance, he will have to take his risk, with the use of such sagacity as he is supplied with; but new seed is always preferable. Sow as early as the weather is settled and the ground warm. Soak the seed in tepid water a long while, say some three or four days; pouring off then the water, but allowing the seed to be wet, keeping it in a warm room for two weeks, unless it begins to crack and sprout, in which case sow immediately. Sow the seed in a bed completely prepared, as for lettuce or peas, in drills about as thickly as peas, or perhaps a trifle thicker. Let them stand one year, when they will be ready for the hedge-row.

TRANSPLANTING.

"The place where the hedge is to be planted must be cultivated. That is, a strip of land of say four or five furrows wide, should be broken in season, and got ready as for corn. Hedge plants will no more grow in the sod than any cultivated plant. The last plowing of it should be done a few days before the setting, so that it may settle, otherwise it will do so after the hedge is put in, and leave the necks of the plants naked, and this will prove fatal to multitudes of them. Take the precaution also that no water stands on any part of it. After the plants are taken up, assort them; that is, put such together as resemble each other in size and thriftiness, and throw out the poorest. Then trim the plants, by cutting the roots to a length of six or eight inches, and the tops to one of an inch or so. The plants should be set from four to six inches apart, in single row. Next take the directions of Mr. C. R. Overman:

"Prepare a 'grout,' or mortar, by mixing equal parts of cow dung and clay, well beaten together; make it thin enough to admit the roots; dip the roots into the puddle, (a handful at a time;) see that all parts of the roots are coated with it; keep each class separate. Next, dig a sloping trench in the ground; lay the plants in straight, with the roots even, the top above the surface; sift fine dirt amongst the roots, and cover with dirt two inches deeper than the top of the roots; tread the ground firm about them, and if the weather be dry and windy, sprinkle twice a week. In this condition let them remain a few weeks, and when vegetation commences, they will be ready to set out in the hedge-row."

"Plants and trees thus trenched will start much earlier than when planted at once.

"When ready to plant, or when the buds have expanded, and the leaves are half an inch long, we consider the plants in the best condition to set.

"We have practiced several modes of transplanting, and will recommend the one we think the most expeditious, easy, and certain. The implements used are a hedge-line, a transplanting trowel, and a rake with iron teeth; any light strong cord will answer for a line, but something like a strong chalk line is best; it may be stretched tight, and spots made on it with red paint, the distance apart you wish to set the plants. It should be at least ten rods long for convenience. The ends are to be tied to stiff stakes, three or four feet long. The trowel is a steel blade, about ten inches long, and three inches wide, tapering towards the end in an oval shape. It should be one fourth of an inch thick in the middle, and tapering to an edge at the sides; and in order to scour and work well, it must be ground and well polished. A curved shank is attached to the upper end, on which a wooden handle is placed, horizontal to the trowel, and in a line with the edges.

"A time when the ground is moist, and the weather cloudy, is preferable for the planting. When all is ready for the work, reset the stakes, (if they have not been left standing,) where they first stood at the ends; by these set as many intervening stakes as may be necessary, exactly in range: do not forget that the beauty of the hedge depends greatly upon the straightness of the line. Rake the ridge down level with the surface, taking out the coarser clods, etc.; for about the distance the hedge-lines will extend, stretch the line tight, and set it exactly in range of the row of stakes, three inches from the ground; three or four sticks, with hitches cut in them, and stuck down at intervals along the line, will serve to keep it steady. As it is easier to work on your knees, you will therefore require thick pads on them. Take the trowel in one hand, place it opposite a spot, and thrust it down its whole length, press it to one side with a twist, and with the other hand insert the plant, two inches deeper than it stood in the nursery.

"Raise the trowel and put it down an inch from the plant, as deep as before; give it a twist towards the plant, which will fasten it at the bottom; and in this way proceed to the end of your line, when another section may be raked, and the line removed. Finish by treading firmly each side of the plants, and your hedge will be planted on 'scientific principles.'"

"The remainder of the work will consist principally in cutting, though the weeds should be kept down by culture till the hedge is out of the way.—

The cutting should be commenced as soon as the plants are vigorously under way. The osage may be cut at any time, and will immediately shoot out and grow as if nothing had happened. Listen to no talk about splashing or bending down, but cut. The first season, perhaps one cutting, say about the first of August, would do; but the second, the hedge should be cut back three times at least; once in the spring, before it starts, once in June, and once in August. This cutting is what makes the hedge; it will cause it to thicken up at the bottom, till it is as impenetrable as a stone wall. The first cutting should be to within two or three inches of the ground; the next to within six inches of the first; and so on, leaving it about six inches higher each time. The cutting may be done with a scythe, a sickle, or a splashing instrument sold at the agricultural hardware stores. It is accomplished with great rapidity; a man will cut miles of it in a day.

"Those who allow their hedges, after setting, to take care of themselves, and to spindle up into brush, must not complain that the Osage Orange will not make a hedge, any more than those who sow wheat in the prairie grass, that wheat will not grow on the prairies."

WEANING OF LAMBS.

The time of weaning differs materially, according to the locality of the farms and the quality of the pasture. In a mountainous country, and where the land is poor, the weaning often takes place when the lamb is not more than three months old, for it requires all the intermediate time to get the ewes in good condition by the time of blossoming, or to prepare them for market. In a milder climate, and on better pasture, they need not be weaned until four months old, and that is about the period usually selected. On the other hand, if the pasture is good, and especially if it is the system or the interest of the farmer to sell his lambs in store condition, they frequently are not weaned until they are six months old.

The first thing to be attended to is, to remove the lambs and the ewes as far as possible from each other. There will be plenty of confusion and unhappiness for a while, and which would be prolonged until it was injurious to both the mother and the offspring if they were able to hear each other's bleating; indeed, it would frequently happen that the ewe could not be confined in her pasture if she heard the continued cries of her young one. Two or three days before they are intended to be parted, the ewes and the lambs should be removed to the pasture which the latter are afterwards to occupy; and then, in the evening of the appointed day, the ewes are to be driven away, probably to the pasture which they

had occupied with their lambs, or if they are moved to another, it should be a poorer and barer one. It will be advisable, although it is not always practiced, to milk them two or three times, in order to relieve their distended udders, and to prevent an attack of inflammation or garget. In a day or two they will be tolerably quiet, or if any one should refuse her food, she should be caught and examined, and the state of her udder should be particularly observed.

The management of the lambs will depend on the manner in which the farmer means to dispose of them; but at all events, they should be turned on somewhat better pasture than that to which they had been accustomed, in order to compensate for the loss of the mother's milk. Many farmers are very fanciful as to the provision for the weaned lambs.—The clover, or the sainfoin, or the after-math, are selected by some; others put their smaller and more weakly lambs to weed the turnip crops; but there can be nothing more desirable than a fresh pasture, not too luxuriant, and yet sufficient to maintain and increase their condition. A great deal of caution is requisite here. The lamb must not be overgorged, lest some acute disease should speedily carry him off. On the other hand, he must not be suffered to decline, for if he does, he will rarely recover his condition, however good the keep may afterwards be.

Youatt on Sheep.

THE PEACH TREE AND ITS MANAGEMENT.

The peach tree requires more care and attention than almost any other fruit tree. As a general thing it has been more neglected. It is universally considered short-lived; hence the necessity, supposed by many, particularly large cultivators in New Jersey, for setting out young orchards every four years to provide for the decay of older ones.

Let us inquire into the causes which have produced this general impression, and disabuse the public of this long-established error.

In planting peach orchards, the universal custom prevails (with but few exceptions) of putting out the greatest number of trees in the shortest possible time. They are then left to take care of themselves. The natural growth being rapid, the branches in a few years are greatly extended, and, when laden with a profusion of fruit, are wholly unable to bear the burden. The limbs are broken, the trees are seriously injured, and present an unsightly appearance. Each year the fruit grows smaller, until it becomes of little or no value; in addition to this, the continual boring of the grub at the root, and general neglect, are the principal causes of making it a short-lived tree. Disappointment follows. The nursery-men come in for a share of abuse for not furnishing

trees true to their character. The failure is attributed to other causes than the one that lies at their own door. No one can reasonably expect to have fine trees or fine fruit without proper care and attention. The satisfaction to be derived from having a good supply of this delicious fruit, ought to be sufficient inducement to bestow a little extra labor without grudging.

There seems to be no unwillingness to undertake a much greater amount of labor in various other ways, with far less satisfactory results. A man will work diligently the whole summer in cultivating a ten acre field of corn; whereas, a quarter of that time, judiciously employed in horticulture, would pay far better. The whole difficulty lies in the fact that the science of horticulture, particularly in the West, is less understood than any other, save, perhaps, that of agriculture.

What are the facts? How are the trees to be planted, and what their after management? First, select trees with their limbs growing near the ground. In preparing the soil, (if a retentive clay,) trench or subsoil to the depth of eighteen inches. Mix some well-rotted manure, adding a half bushel of wood ashes with the soil where the trees are to be planted, or dig holes eighteen inches deep and six feet in diameter; excluding the subsoil, fill in with rich dirt, and make it sufficiently high to allow for settling.—The only objection to the latter plan is the danger of standing water around the roots. To guard against drought, and insure a luxuriant growth, mulch the roots with coarse litter or spent tan bark, two or three inches in depth. After the leaves have fallen, shorten in the branches at least one-third, forming as near as possible a perfect head, continuing the process of shortening in each successive year, cutting out all the feeble and slender shoots. Never suffer the trees to be overburdened with fruit. Thin it out when very small, and then again when half grown, dividing the fruit on every branch throughout the tree, say four or five inches apart.

To guard against destruction by the peach worm, draw the earth around the trunk of the tree six or eight inches in height, in the early part of May. At the top of this little mound the bark will be found too hard for the safe depositing of the egg, which is laid by a long black beetle, about the first of June. In the latter part of summer take the dirt away, remembering to renew it every spring. If this course were attentively pursued, we should hear nothing more about the peach tree being short-lived, nor the deterioration of its fruits.—*Valley Farmer.*

MANY a true heart, that would have come back like a dove to the ark, after its first transgression, has been frightened beyond recall by the angry look and menace, the taunt, the savage chastity, of an unforgiving spirit.

GRAIN DRILL AND PLASTER SOWER.

MESSRS. EDITORS:—In answer to the inquiry of H. H. B., I would say that Messrs. J. M. Harvey & Son, of Amsterdam, N. Y., are making a drill that is nearer your correspondent's idea of what a drill should be, than any other I ever saw. It is Ross' patent, with some very valuable improvements of their own. It is calculated to sow all kinds of grain in drills, and has also a plaster sower attachment that will sow any desired quantity either broadcast or in the drill tubes, and will undoubtedly sow any other similar fertilizer. This same plaster-sower works admirably in sowing clover and timothy seeds, the only small seeds I have sown with it. You will see by this that it will not sow the small seeds and fertilizers at the same time.

Some of the advantages of this drill over any other, are its simplicity, every part of the gearing being in sight; the grain is also seen as it passes from the box to the tube, so there is no danger of any part failing to perform its duty without being seen by the driver. Every tooth has a cultivator point, and a guide immediately behind it to regulate the depth, and cover the grain. These two very essential points, I was told by the makers, cannot be used by any other machines as they are especially and separately covered by patent. When not wanted, the plaster-sower can be removed by simply unscrewing three nuts. Every farmer knows that it requires but a few additional pounds to make a very perceptible difference in the labor of a team when traveling over plowed fields. The change from drill to broadcast is done in half a minute.

This I think is the same machine referred to by your correspondent, as Ross, the patentee, is a Pennsylvanian. The Messrs. Harvey own the right for this State, and it seems strange to me they do not let the farmers know it through the columns of the Country Gentleman. J. M. V. Florida, N. Y.

Country Gentleman.

CORN BREAD.—Everybody who has been at the Mansion House, at Buffalo, New York, has learned the luxury of the corn bread there provided. The clerk is often taxed to write directions for home-manufacture, and I thus procured a recipe for domestic use, which I copy for you, so that those who wish may try a piece of bread from the Mansion.—It is as follows: One quart of sour milk, one tablespoonful of saleratus, four ounces of butter, three tablespoonfuls of flour, three eggs, and corn meal sufficient to make a stiff batter.—*Exchange.*

Those who touch vermilion become red, and those who touch ink become black; so people take their character from their companions.

For the Arator.

GUANO CONVENTION, &c.

RALEIGH, MAY 20, 1858.

The Executive Committee of the North Carolina State Agricultural Society met. Present:—Thomas Ruffin, Wm. R. Poole, Charles L. Hinton, R. A. Hamilton, William H. Jones, and the Secretary.

The object of the meeting being, as stated by the Chairman, to have the Society represented in the Convention to be held at Washington City, on the 16th day of June next, for the purpose of taking some decisive steps, on the part of those interested, for the reduction of the price of Guano:

The following persons were appointed Delegates to said Convention on the part of this Society, viz:

Henry K. Burgwyn, Northampton.

Hon. Weldon N. Edwards, Dr. Henry L. Plummer, Warren.

James M. Bullock, C. H. K. Taylor, A. W. Venable, Thomas Miller, William A. Eaton, S. S. Royster, Granville.

Thomas McGehee, John W. Cunningham, Person.

James E. Williamson, Hon. Bedford Brown, Calvin Graves, George Williamson, Sen'r., Caswell.

William A. Graham, Paul C. Cameron, Elisha Mitchell, William J. Bingham, Orange.

Hon. Thomas Ruffin, Edwin M. Holt, Sen'r., Gen. Benjamin Trollinger, John Stafford, Alamance.

Dr. W. R. Holt, Davidson,

Gen. J. B. Littlejohn, Col. J. A. Whitaker, E. A. Cradup, Franklin.

Richard H. Smith, Thomas P. Devereux, Nicholas L. Long, William Hill, Hon. John Branch, Halifax.

John S. Dancey, Robert R. Bridgers, Henry Mordecai, William Norfleet, William G. Battle, Turner W. Battle, Edgecomb.

Charles L. Hinton, R. A. Hamilton, Thomas J. LeMay, Wilson W. Whitaker, L. O'B. Branch, Needham Price, A. T. Mial, Wake.

R. C. Puryear, Nich. W. Williams, Surry.

Peter W. Hairston, Davie.

John M. Morehead, James Sloan, Robert J. Lindsey, Ralph Correll, Guilford.

Joshua Collins, Charles Pettigrew, H. G. Spruill, J. C. Norcom, Washington.

Lewis Thompson, John Devereux, Cullen Capehart, Bertie.

William K. Lane, Col. John Everitt, Geo. W. Collier, Wayne.

Warren Winslow, Cumberland.

William D. Bethel, Thomas S. Galloway, Dr. Edward F. Broadnax, Hon. Thomas Settle, Rockingham.

Charles P. Fisher, E. D. Austin, J. F. Foard, Down.

Hon. A. Rencher, Dr. Fred. Hill, Lawrence Haughton, Chatham.

J. W. B. Watson, Johnston.

L. W. Humphrey, Onslow.

Thomas S. McDowell, Bladen.

Hon. Kenneth Rayner, Hertford.

On motion, ordered, That the Secretary address a letter (which he is authorized to have printed) to each Delegate, notifying him of his appointment.

On motion, it was also,

Resolved, That Delegates be appointed to represent the State Society in the Convention of the American Pomological Society, to be held in the City of Rochester, New York, on Wednesday, the 24th day of September next.

The following persons were then appointed to attend said Convention, viz: Messrs. George W. Johnson, of Milton; Joshua Lindley, Guilford; Thomas Lindley, Chatham; and S. W. Westbrook, Guilford.

JOHN C. PARTRIDGE, Secretary.

GUANO FOR GRASS LANDS.

We have recently conversed with two gentlemen—both practical men and of critical observation—who informed us that they have now fields in grass, and yielding good crops, laid down some five, six and seven years ago, manuring them solely with guano, and receiving little or no manuring since. If such were to be the general result, we might bring up our farms to a wonderful degree of fertility, because a third or a half of the tillage land laid to grass with guano, and producing a full crop for several years in succession, would enable us to appropriate all the manure of the farm to the hoed crops. This would allow of very high manuring, and put the land in such condition as to produce heavy grass crops without the further application of guano. But we need further experiments, and to test the guano upon its own merits, by putting the land into grass without a particle of any other manure.—N. E. Farmer.

Do Good.—Thousands of men breathe, move, and live—pass off the stage of life, and are heard of no more. Why? They do not a particle of good in the world, and none were blessed by them; none could point to them as the instrument of their redemption; not a word they spoke could be recalled, and so they perished; their light went out in darkness, and they were not remembered more than the insect of yesterday. Will you thus live and die, O man immortal? Live for something. Do good, and leave behind you a monument of virtue that the storm of time can never destroy. Write your name, in kindness, love, and mercy, on the hearts of thousands you come in contact with year by year. You will never be forgotten. Your name, your deeds, will be as legible on the hearts you leave behind, as stars on the brow of evening.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., JUNE, 1856.

THE Editor of the ARATOR, having returned to his post, after an absence, on a visit to Texas, of three months, cordially salutes his readers: wishing them continued advancement and abundant crops, the highest social enjoyment and perfect contentment in their native land.

The Editor traveled from Galveston, by the way of Brenham, La Grange, and Gonzales, to San Antonio, and returned *via* Austin, examining much of the intermediate country. He saw some of the richest lands, finest prospects, and most beautiful locations for residences, in the world; he met with a highly intelligent, moral and religious people, in many parts of the State, forming communities equal in these and all other high social virtues, to any in the older States; he beheld flourishing towns and villages, extensive plantations, handsome country residences; and numerous flocks, herds, and cavallardos, grazing on the rich, green and wide spread prairies. But he saw nothing—all things considered—to charm a citizen of the glorious Old North State, who is happily situated, from the land of his nativity, of his kindred and friends. In Texas, generally, though in places there are some beautiful and highly finished improvements, things appear to be in a crude, immature state. This is strikingly seen in the houses, which are for the most part, of the rudest sort.—Conveniences and comforts are scarce and costly. The people are restless and unsettled, from the fact, in many instances, that they have found, there are portions of the State more desirable than those in which they have located. The moving and agitated state of society renders life and property some less secure than in old settled and quiet countries; and this accounts for the occasional lawless outbreaks which mar their peace; for the people in Texas are no worse than elsewhere—indeed, while acts of *violence* may be more frequent among them, according to population, crimes of *turpitude*, it is believed, are less frequent, than in many of the old States. Being in an unsettled condition, they are brought more into collision; and men when agitated, are more apt, like the elements in

commotion, to bring about some fatal or painful concussion.

Yet improvement is advancing, and things are settling down. The church and the school house are everywhere paramount objects; and everywhere, in the older settlements, they are erected, respected and well supported. The stately mansion is beginning to supersede the log cabin; the carriage and buggy are gradually taking the place of the saddle and pony; the steam car is beginning to supplant the ox wagon; respectable emigrants from all quarters are constantly pouring in; and Texas will soon be great in population, opulence, improvement and refinement, as she now is in the extent of her territory, the fertility of her soil, and the hospitality, intelligence, and chivalry of her sons. The Editor of this paper will ever cherish a pleasing and grateful sense of the kindness with which he was everywhere received and entertained, during his brief but delightful sojourn in the bright "lone star State."

He intends, in a future number, to give a more particular account of his adventures South.

LIBERAL ARRANGEMENTS FOR THE FAIR.

Stock and articles for exhibition will be transported to and from the next State Fair, on our railroads, FREE; and persons attending the Fair, for half price. We are much gratified to learn from the Secretary of the Executive Committee of the State Agricultural Society, that at the request of the Committee, the Wilmington and Raleigh, and Raleigh and Gaston Railroad Companies have nobly resolved to transport Articles (one of each class) and Stock, to and from the State Fair, FREE; and persons attending the Fair, at *half price*. This highly praiseworthy liberality, on the part of these Roads, is duly appreciated and commended by the public; and we doubt not the example will be followed by the other Roads leading to this point, whose response has not yet been received. It will encourage the people to come from all quarters and bring in their contributions, to swell the variety, and increase the interest and usefulness of the grand Exhibition.

TO SUBSCRIBERS.

Every subscriber, who has not paid, will please send in the amount of his subscription. Our list, if *every one* pays, will *barely pay expenses*; and surely no one will be so ungenerous or unjust as to *delay* payment. On the contrary, we *expect* to be agreeably surprised, *very soon*, by receipt of the money and a batch of new subscribers from all of them.

STATE SHOWS, 1856.

American Pomological Society, at Rochester,	Sept.	24
Canada East, at Three Rivers,	Sept. 16, 17, 18	
Canada West, at Kingston,	Sept. 23, 24, 25, 26	
Georgia, at Atlanta,	Oct. 20, 21, 22, 23	
Illinois, at Alton,	Sept. 30, & Oct. 1, 2, 3	
Indiana, at Indianapolis,	Oct. 20, 21, 22, 23, 24, 25	
Maine,	Oct. 28, 29, 30, 31	
Michigan, at Detroit,	Sept. 30, & Oct. 1, 2, 3	
New Hampshire,	Oct. 8, 9, 10	
New Jersey, at Newark,	Sept. 10, 11, 12	
New York, at Watertown,	Sept. 30, & Oct. 1, 2, 3	
North Carolina, at Raleigh,	Oct. 14, 15, 16, 17	
Ohio, at Cleveland,	Sept. 23, 24, 25, 26	
Pennsylvania, at Pittsburgh,	Sept. 30	
South Carolina, at Columbia,	Nov. 11, 12, 13, 14	
United States Agricultural Society, at Philadelphia,	Oct. 7, 8, 9, 10	
Wisconsin, at Milwaukee,	Oct. 8, 9, 10	

INQUIRIES ANSWERED.

MR. ULLA, Rowan County, May 17, 1856.

MR. T. J. LEMAY—*Dear Sir*: Will you be kind enough, in the next number of the Arator, to answer the following interrogatories? 1st. The time of year to plant Carrots? 2nd. The proper kind of soil in which to plant? The amount of seed required per acre, or in other words how to plant? An answer to the above would be gratifying to several of your subscribers in this county, as well as myself. Very respectfully yours,

S. D. RANKIN.


ANSWER. 1. For an early crop of Carrots, sow in March, as soon as the frost is out of the ground; and from that time to the end of May, for the main crop. The last of April or first of May would probably be the best time for a field crop, as the early plantings are apt to produce seedy stalks and stringy roots, and the seed for the latter planting should be soaked 24 hours in warm water and mixed with plaster or ashes. They will then come up in fresh prepared ground before, and get the start of, the weeds, and may be, consequently the more easily cultivated.

2. The Carrot requires a loamy or sandy soil, made rich by liberal manuring the previous year—as it does not grow so well in fresh manured land. The soil should be deeply broke and finely pulver-

ized before planting. As a garden crop, it may be sowed in drills laid off about 14 inches apart and one inch deep, and thinned out to the distance of five or six inches from each other, while the plants are young. In the field, for stock, the drills should be eighteen inches apart, and the plants left to stand 7 or 8 inches apart in the row. The Long Orange and Large Lemon are best for stock. In after cultivation, care must be taken, as in beets, to keep out grass and weeds, and keep the ground lively and light by stirring until the crop is master of the ground. To preserve in winter, they should be dug in a dry time, and will keep well with us in a cellar or barn, in bulk.

3. Two pounds of seed to the acre would be more than enough, if they could always come up and grow unmolested; but to ensure a good stand, gardeners generally put in at the rate of four pounds to the acre.

4. There are several varieties of the Carrot.—The Early Horn, good for early garden vegetable. Large White Belgian, fine for soups and seasoning, but otherwise inferior. Blood Red or Purple, sweet, and esteemed for table use. Long Orange, best for field. Altringham, differs from Long Orange, only, in growing a little out of the ground, with a green top—Large Lemon more turnip like in shape, prolific, and fine for stock.

 It is now late, but a good crop may be raised, if properly planted and managed, early in June.

TROY, MISSISSIPPI, April 1st, 1856.

MR. T. J. LEMAY—*Dear Sir*: I have been reading your very interesting periodical constantly since the appearance of the first number, and have always found it a very present help in time of need—it contains so many valuable communications, receipts and editorials.

You have answered many queries, on many subjects, but I have never noticed anything on the culture of the Onion. You will grant me, therefore, the privilege of making a few enquiries in regard to the same.

1st. When is the best time for planting?

2nd. At what age should the dirt be removed from the roots?

3rd. At what age would you take them up?

4th. How are they dried? Are they dried in the sun or in the shade? Do you hang them up or let them remain on the ground?

Any information upon the subject will be gratefully received from either you or any of your subscribers.

Wishing you much pleasure and success in your enterprise, I subscribe myself yours, very respectfully,
A FEMALE PATRON.

ANSWER.

1. The time of planting the Onion varies according to circumstances. If the Button Onions or Sets are to be planted, the best time is the last of September, or first of October, in shallow 14 inch drills, three or four inches apart, and kept stirred sufficiently, fall and ensuing spring, to keep out grass and weeds and keep the ground lively. When raised from the seed, fall sowing (1st Sept. in Mississippi) will suit most varieties; but early spring answers to raise for sets—say from the 1st of March to 1st of May. Previous to setting out or sowing, the ground should be well prepared by mixing thoroughly with it some of the oldest and strongest manure to be had. The seed may be sown moderately thick, half inch deep in drills and twelve inches apart. The plants after taking a good start, are thinned out and transplanted, carefully leaving those to stand in the drill undisturbed, two or three inches apart. They should be carefully hoed three or four times while growing, and after the plants begin to bulb, weeds must be removed by the hand.

2. At this stage, indicated by craking of the ground, the dirt, at the surface, may be removed from the tops of the bulbs, by scraping it away on each side, with a hoe, towards the middle of the row—not the roots, for they must not be disturbed with either hand or hoe. Hen guano, or some very rich, well rotted manure, should be mixed with the earth in the drill before planting *Buttons* or *Sets*.

3. As soon as the tops wither and die down, which will probably be early in July, it is time to gather or take them up, for from that time the fibrous roots decay.

4. After they are pulled, they should be laid out in the shade, to dry, and when thoroughly dried, removed to a place of shelter, and kept thinly spread, in a dry airy place, until winter, when they may be put up in larger bulk. They are sometimes tied in bunches and hung up. This is certainly the best way to keep the Buttons. Much care must be taken in Mississippi to prevent rotting, as they have a great tendency to rot in Southern latitudes. We add the following from the Patent Office Reports:

Onion seed is sown in Wethersfield from the 1st of April to the middle of May; the earlier the better, provided the ground is dry enough to work

light and fine. After preparing the land by manuring heavily, and harrowing and raking fine, draw drills fourteen inches apart, with a marking rake, and sow at the rate of eight pounds to the acre, if wanted for bunching. For large bushel-onions, six pounds will be sufficient. The sowing is mostly done with machines, which can be graduated to sow any desired quantity to the acre. If convenient, it is better to go over the ground with a light roller immediately after the sowing. It is customary to weed them three times. At the first two, the earth is drawn up a little to the plants; and at the third, or last weeding, it should be brushed clean away with the fingers, to give them an opportunity to bottom entirely above ground. Onions are an exception to the theory of rotation of crops. They succeed equally well any number of years on the same ground, if kept highly enriched with hog-dung, or fine yard manure, spread on every spring, and turned in with a light furrow. A top-dressing of wood ashes applied after the second weeding is very beneficial to this crop, as will soon be observed by the dark and healthy change of color given to the plants.

The above mode of culture will produce a fair crop of good-sized onions in the Middle and Western States, particularly of the Large Red and Yellow varieties, if sown very early in the spring, and thinned out two or three inches apart in the drills.

To keep onions in quantity through the winter, deposit them when perfectly dry, eighteen inches thick, evenly, on a tight floor in an out-building, leaving a space of two feet next the walls of the room on all sides; spread a sheet over them and tuck it close round the edges of the heap: fill the space with fine hay, and tread it hard; then cover the whole two feet thick with the same, and the onions will keep in perfect order. They should never be disturbed while frozen, but as soon as the frost is completely out in the spring, remove the covering and spread them all over the room, and open the doors and windows to give them air in pleasant weather.

The above mode of culture, it is believed, will produce fair crops of good sized onions in the Middle States, particularly of the Large Red variety. The Yellow will undoubtedly succeed well.

If a compound of gypsum and sulphate of magnesia be used on the floors of stables, it will absorb the moisture and ammonia, keep the stable dry and free from offensive smell. The compound salt, after it has absorbed all the moisture possible, is removed to be used for manure, and fresh salts applied in the same way. This is an excellent plan for keeping stables dry and healthy.

CORN AND OTHER CROPS.

THE Spring has been late, and the corn, cotton and oats are backward, in this State. The season, we were told in Texas, was at least a month later than usual in that State. When we left there, the 23rd of April, many planters had not procured a stand of corn or cotton, but in places where they had, the corn was six or eight inches high, and the cotton reaching up to near the same height.—When we reached home, on the 6th of May, we found the earliest corn just beginning to show plainly in the rows, and much corn and cotton not up; and we have since had so much cool weather, the ground becoming, too, dry and crusty, that they have progressed slowly.

APHIDES.

THESE are very small, lice-like insects, which attack and destroy various plants and trees, living on their juices. Sometimes they spread themselves over the leaves of young apple trees, and soon cause them to wither and die. They are numerous in species, most plants having a different kind. They may be destroyed by fumigations with tobacco, Cayenne pepper, or sulphur, a solution of whale oil soap, or water-slacked lime sprinkled upon them. We believe the juice of the Jamestown weed, also, will destroy them. Last year, we saved a fine young tree which was almost sucked to death by them, when it was discovered, by bruising the leaves of the weed until the juice could be squeezed out of them; then taking them in the hand and drawing them upwards over the leaves, limb by limb, until all the foliage left on the tree was thoroughly wetted with the juice; and the result was, the Aphides left, and the tree, this spring, is beautiful and flourishing.

PREPARATION OF SEED CORN.

THE Country Gentleman republishes the following mode of preparing seed corn, furnished to Mr. Shinner's Journal of Agriculture in 1844, by Lansing Wetmore, of Pennsylvania. If any of our readers have late patches yet to plant, we hope they will try the experiment, and report to us, next Fall, the result.

At noon of the day before planting, 18th May, I put my seed corn to soak in a strong decoction of copperas water, say 2 lbs. copperas to warm soft water, sufficient to cover a bushel of corn.—The next morning took out a peck, added a pint or more of soft soap, stirred it thoroughly, then put on plaster enough to make it convenient to drop for planting, say one quart. The whole field

was planted with seed thus prepared, except four rows, which were planted with seed without any preparation. The after-culture of the whole was alike—passing through each way with the cultivator, and hoeing twice. The four rows last mentioned were cut up, harvested, and the corn weighed and measured by itself; also four rows next adjoining, the seed of which had been prepared as above. The produce of the four rows of unprepared seed was eleven bushels and a half. The produce of the four rows from the prepared seed was seventeen bushels—a difference of five and a half bushels of ears in one hundred and twenty hills. The yield of the remainder of the field averaged fully equal to the four best rows measured.

The difference in the growth and appearance of the corn of the prepared and unprepared seed was striking from the time of its appearance above the ground until it tasseled—the former looking green and vigorous, the latter puny and yellow. It was all cut down by the frost when about three inches high, but came on finely after the first of June.—There was scarcely a soft ear in the field, excepting on the four rows of unprepared seed. These were about a week later in ripening than that from the prepared seed. The soil is a sandy loam. The whole expense of preparing the bushel and three pecks of seed did not exceed 62½ cents. The increased produce of the field by preparing the seed was over 200 bushels ears.

THE PROSPECTS OF THE WHEAT CROP.

IN all quarters of the country, the prospects for a good wheat crop are represented to be flattering. In this vicinity the wheat, except some fields thinned by the winter's cold, looks very promising; and such, we learn, is its appearance throughout the State. But it is not yet out of danger. It may suffer from drought; it has yet to pass through the stage at which it is liable to be cut off by rust, and if to the long continuance of the cool nights, much wet weather should be added in June, damage may be apprehended from that cause; and it may be injured by the chinch-bug, which, we regret to learn is making its appearance in some places.

A propos, touching this and other insects: We heard it suggested, the other day, by an intelligent farmer, that it is highly probable these pests to wheat and other crops may be driven away by the liberal use of guano. He was brought to this conclusion by the fact, that in fields where he had used guano on his wheat land, he had not been able to discover a single chinch-bug; whilst in wheat fields where this fertilizer was not used, the bugs were making their appearance, in places, in considerable numbers. It is known, from other experiments, that other insects have a kind of antipathy to guano, and it may therefore, if judiciously used, answer the double purpose of increasing our crops, and driving off the insects that destroy them. This is an important matter, and we request a report of the experience of others in regard to it.

CORN FOR GREEN MANURE.

THE question asked and answered, in the following article from the Country Gentleman, involves matter of great importance to the farmers of North Carolina, and we insert it to awaken their special attention to the subject:

MESSRS. EDITORS: I wish to make the inquiry of you, of the relative value of sowed corn plowed under as a manure. Would it not be worth more than clover or buckwheat? We know we can raise ten times the amount in bulk by sowing the large western corn, that we can of clover or buckwheat. By rolling it down, it can be covered nicely with a good plow. I plowed under an acre last year, just by way of experiment. But I thought it would be safer to be enlightened a little on the subject, than to be groping in the dark. Please to give me your opinion in reference to its *value*, compared with other green crops, and in what state of the corn it would be best to plow it under. OTSEGO.

Analysis shows clover to be the most valuable green crop for manure, according to its weight, and experiment confirms its value. The same weight of corn stalks would not probably yield more than half the amount of fertility. We should discard buckwheat, except as a weed-smotherer, while corn and clover could be had. We have never found so great a disproportion in the *quantity* of corn and clover, as our correspondent states, the corn stalks never exceeding the weight of clover more than three times, on soil of equal fertility. The large sorts of corn, (which however will not grow so thick as small,) may increase the difference.

If cut too green, the stalks will not have sufficiently developed their fertilizing qualities; and if too ripe, they will not decay soon enough. The best time is when the edges of the leaves begin to dry, or about the time that the ears begin to be glaze.

We want measured experiments to determine the relative value of these crops for manure—will not our correspondent undertake a series for this purpose?

HOW TO FATTEN LAMBS FOR MARKET.—A correspondent of the Maine Farmer, says that Mr. Elisha Soper, of Orland, had for years fed grain to his sheep, for the purpose of forwarding his lambs, but received but little benefit therefrom.—He at last thought there might be a better way, so he tried the experiment of feeding his lambs with oats, in a trough made by nailing two boards together, covering the ends, and raising it about six inches from the floor. He puts in the oats and leaves them until the lambs learn to eat them, which he says they will do when about three weeks old. He leaves a passage for his lambs so small that his sheep cannot trouble them, both in his barn and in a yard made for this purpose after going to pasture, and continues to feed until he sells, which is in June. He has lambs ten weeks old, that will dress sixteen pounds.

WORK FOR JUNE.

THE main thing, this month, is the clean and thorough cultivation of your crops. See that your first plowings are deep and close, finely pulverizing the earth and breaking as near the plants as possible—followed by the hoes, sweeping away every vestige of grass, weeds and bushes, and adjusting the earth neatly around every stalk of corn, cotton or tobacco.

Corn may be planted to the 20th of June, in strong land, if well put in. Continue to plant to the utmost of your ability, and as early as possible—plowing deep and close. After the first hoeing, give your corn a top dressing of plaster, ashes and salt—10 parts plaster, 4 of ashes, and 1 of salt.—Mix and spread round the hill. It will be of special service in droughts.

Plant Peas—a hill for every hill of corn, and after up and started to grow, sprinkle plaster around them, and it will well pay the trouble and expense.

Sow Peas to turn under for a wheat crop. It will greatly increase the yield and permanently improve the land.

Pumpkins should also be planted in the corn and in a separate patch. They are fine for stock.

Millet should be sowed in the richest lots for forage. If the seed cannot be obtained, sow corn for the purpose.

Buckwheat, in high sandy land, does well sown this month, for meal or forage. For hay, cut and cure when in bloom.

Potatoes should be set out as soon as possible.

Pay special attention to the kitchen garden.

Attend to your orchards. If the trees are too heavily laden with fruits, thin out. This is the season for budding Peaches, Plums, Nectarines, Apricots, &c. Mulch and water young trees. A gang of shoats in the orchard, to eat the falling fruit, and destroy insects, will do great service.

Always keep an eye upon your manure pile.—Keep it accumulating as much as possible, so as to have a much larger quantity than ever heretofore, for the next year's crop.

CURE FOR RATTLESNAKE BITE.—The Wisconsin Farmer says—"Take yolk of a fresh egg, put it in a teacup; stir in as much salt as will make it too thick to run off; spread as a plaster, and apply it as soon as possible to the bite, and we will insure your life for a half-dime." Let those who are bit try it, we do not desire a trial; having frequently tried the salt and egg, (boiled one hundred and fifty seconds) internally without being bitten, with complete success.

CULTURE AND VALUE OF MILLET.

MILLET is undoubtedly a valuable provender, and believing it may be profitably added to our cultivated crops in North Carolina, we subjoin the following testimony in its favor, from a correspondent of the *Ohio Cultivator*:

Having with many others suffered from the severe drouth of 1854, in my hay crop, I was induced last spring to procure half a bushel of millet seed. When preparing my ground for oats, I reserved one acre and a quarter for the millet. After corn planting, say about the first of June, I plowed the said ground again, harrowed it down, sowed my millet seed, harrowed thoroughly again, and quietly waited the result. Well, after a while the young sprouts made their appearance, looking very much like what is generally called pigeon grass. But after securing my wheat and oat harvests, I had a heavy crop to cut on my millet ground. Leaving a small piece which I sowed thinner than the rest to ripen for seed, I mowed the field, and cured it as clover should always be cured—in small cocks. When sufficiently dry, I carted *five heavy loads* to my barn, and my horses, cows and sheep have thanked me many times for my first experiment with millet. They have all eaten it readily and greedily, and I am so highly pleased with it, that I shall sow much more this spring.

The time for sowing should be as indicated above, when the weather is warm enough to make corn grow readily—from the 1st to the 15th of June—and the time of harvesting comes after the rush of other harvests is over, thus accommodating the farmer, at both periods when it wants attention. It yields seed bountifully, which makes a flour very palatable for man, and is decidedly nutritious for every animal and not forgetting the fowls—they are very fond of it. I say then to my brother farmers, try a piece of millet, and I am confident that if you try it once, you will again.

ADORNMENT OF HOME.

We earnestly call the attention of our readers to the following remarks of the Valley Farmer.—Read and profit.

Home has a meaning and intention beyond the simple necessities of life. It is made, or ought to be, for something more than a place to eat and drink and sleep. It is for cultivation, pleasure, rational enjoyment, and improvement. Cultivated man generally exhibits some taste about his home. It is generally the index to his degree of cultivation. The savage leaves his home unadorned.—The barbarian deems it unworthy of him to study for rational adornments of his home; or even for ordinary comfort.

Just as civilization advances, taste exhibits itself in the homes of the people. A cultivated mind craves a beautiful home. And what makes

a beautiful home? It is not wealth, for we have just been told of a man worth \$250,000 who never had a chair in his house, or rather hovel. He and his, set on rude stools. It is not professional honors, nor learning, nor talent, that makes home beautiful; for we have seen all these in homes disgusting to every idea of taste or order or neatness. It is what is around and within our home that makes it beautiful—the evidence of taste, refinement and culture that encircles it. A home must have some things about it or it cannot be tasteful, it cannot be beautiful, cannot be in the highest degree pleasant. The first of these is *order*. There must be order in the arrangement of the buildings. They must be situated in proper relation to the points of compass. A house that faces no way in particular—neither north, south, east or west—is sadly out of order, unless the road or street, or hills or valley, or stream, or some other prominent natural object, be so important as to be its regulator. When a house is orderly established with respect to the points of compass or the scenery about it—the next thing is have the land immediately around it so graded as to carry off all water and look pleasantly to the eye. Then the fences about the house should square with the house and other buildings. They should be neat, trim—the best of their kind—made both with respect to convenience and good taste. Fences may be cheap and in good taste, or expensive and out of taste. The yards, gardens, &c., about a home, when neatly fenced, add greatly to its appearance. Fine fences beautify a farm, and especially a home. When kept in good repair, painted or whitewashed, free from a hedgeway of weeds, briars, thistles, brushwood, &c., they remind every passer-by of thrift, taste and happiness within. The next point of importance is walks to the road, garden, yards and out-buildings. They are easily made, and when neatly made and well arranged, add greatly to the beauty of home. A puddle of water, a mud-hole, or any such pestiferous obstruction in a frequented path or walk about a farmer's home is a great annoyance, and reflects seriously on his good taste and good sense. The walks made, trees and shrubbery are wanted. Trees along the road, trees about the yards, and shrubbery about the house, are so natural, so grateful to the eye, so musical to the ear, so delicious to the taste, that a home without them scarcely deserves the name. We would not have it all trees about a home.—That would create too much dampness. But just trees enough to make a sprightly contrast between sunshine and shade—between heat and cold.

But trees are not enough. There should be vines—an abundance of vines, those beautiful emblems of affection, about every home. A home without vines, is like a man without a wife, or a bird without a mate. It wears a look of desolation. Vines come creeping about so lovingly, grow so thriftily, bloom so profusely, can be trailed into so many beautiful forms, and are withal so fresh and fragrant that they should be about every home to remind its inmates of industry, sprightliness and affection.

Then come the flowers, close along the walks, beside the doors, under the windows, in the corners of the fences—sprinkled in profusely and yet orderly, so as to give an idea of finish as well as of beauty and happiness. A home without flowers! No, let it not be. Let every woman, every child with tiny hand and growing taste, plant flower seeds and roots in little nooks and recesses and beds where they can as well grow as not. They love to grow and blossom. Who does not love to see them? Let the buildings all be painted, then let the flowers challenge them to a contrast of colors. When all is in order, let it be kept in order. And when the outside is beautiful, let the inside be, with order, neatness, comfort, taste, virtue, peace, good will, love and happiness.

IRISH POTATO CULTURE.

EDITORS SOUTHERN CULTIVATOR:—Although the Irish Potato crop for the present year has been planted, a short statement of a plan of culture which has succeeded better than any other I have ever tried, may not be without interest to your readers. It may be the same as practiced by others, but I have nowhere seen it described in detail.

The 20th of March is as early as the general crop should be planted in this latitude. If planted earlier, the frosts, which frequently occur about the middle of April, are apt to injure it. As few may be planted about the 1st of March for early use.

The ground for potatoes should be turned over and broken up thoroughly, at least twelve inches deep, in January or February. Lay off the rows two and a half feet apart and run three times in the same furrow with a broad scooter plow. Cut the potato into pieces of two eyes each and drop them one foot apart in the bottom of the deep furrow so made. Then fill the furrow with half-rotted straw or oak leaves, or chip or stable manure. If nothing better can be had, pine straw or sawdust. But these latter are indispensable in this climate to keep the soil loose, mellow and moist

about the potato. When the plant is about four inches high, plow out the middles thoroughly and draw the dirt a little to the potatoes, but make no high ridge to bake or be dried through and through by the sun. As soon after this as you have a good rain, cover the middles as deep as possible with leaves, pine straw, saw dust or something of that kind. This mulching renders any further working unnecessary and keeps the soil cool and moist through the driest summer. Without mulching, no amount of manure or labor will insure a fine yield of potatoes in dry as well as wet seasons.

The depth and width of the drill measure the yield of the crop. Few or no potatoes will be found outside of the mould made by the straw or leaves with which the furrow was filled. By this simple mode of culture, I have made over 300 bushels of potatoes to the acre, on land whose ordinary yield of corn is not exceeding twenty bushels. It requires but little more labor than cotton. With potatoes \$2 per bushel (the usual price) or even at \$1, and cotton at 10 cents per pound (the usual price) it is easy to perceive the increased profits our farmers who are convenient to market, would receive by planting more potatoes and less cotton.

It is a mistake to suppose that the Irish potato will not keep well at the South. I have found no difference between the Sweet and Irish potatoes in this respect. I sold Irish potatoes in March of this year, when there were few Sweet potatoes in the country even for seed. A. W. S.

Shelby Springs, Ala., 1856.

RECEIPTS FOR ARATOR,

SINCE MAY No.—\$1 each, Solomon Pace, Wake, N. C.; Dr. John H. Faison, Comfort, N. C.; R. C. Wilson, Taylorsville, N. C.; E. C. Chambers, Pekin, N. C.; John Walker Charlotte, N. C.; J. W. Ross, Sharon, N. C.; J. R. Dunn, & S. H. Dunn, Forestville, N. C.; Stephen Neal and Whitson G. Blackwell, Locust Hill, N. C.; B. F. Fraley, Salisbury, N. C.; Wm. H. Horah, Salisbury, N. C.; W. K. Lane, Goldsboro' N. C.; \$3 Josiah Collins, Washington Co., N. C.; \$1, Benton Williams Wake, N. C.; A. J. Leach, Johnston, N. C.; Maj. J. P. H. Russ, Roger's Store, N. C.; Ambrose Costin, Lincolnton, N. C.; W. W. Whitaker, Wake, N. C.; Hon. Thos. Ruffin, (Alamance) Wm. M. Rogers, Robert Moore, Michael Shoffner; John W. Southall, Murfreesboro, for 2 years, \$2; \$1, Dr. J. J. Thapton, Leasburg, N. C.; Lawrence Hinton, Wake, N. C.; Thos. V. Myrick, Murfreesboro.

INDEX TO JUNE NUMBER.

Arsenic, caution,	456
Accuracy of Language,	457
Aphides,	476
Adornment of Home,	478
Burns, Nitrate of Silver for,	452
Bones, save,	456
Charcoal for Swine,	451
Cabbages, Heading,	452
Coffee Culture,	452
Coffee, its cost, &c.,	455
Cucumber Culture,	456
Corn Raising without tillage,	457
Cow, the Yorkshire,	457
Cotton culture,	469
Corn Bread,	471
Corn and other crops,	476
Corn for green manure,	477
Culture and value of Millet,	478
Distemper in Horses,	463
Do Good,	472
Editor of the Arator,	473
Fall Plowing,	451
Female Characteristics,	462
Farming Carelessly,	463
Gas Tar as a Farm Paint,	456
Grafting,	462
Grain Drill and Plaster Sower,	471
Guano Convention,	472
Guano for Grass,	472
Horse Radish,	452
Inquiries Answered,	474
Irish Potato Culture,	479
Lambs, weaning of,	470
Liberal Arrangements for the Fair,	473
Lambs, how to fatten,	477
Metals,	455
Manures, Blood,	453
Manure Yard, to Construct,	454
Mechanics, Education of,	457
Oat crop no Exhauster,	458
Osage Orange Hedge,	469
Peach Tree, its Management,	470
Peach Tree Borer,	463
Pruning Fruit Trees,	455
Pomological Convention,	459
Plums, Cultivation of,	459
Potatoes, Sweet, Planting,	460
Potato, Florida,	461
Raspberry Culture,	463
Suicide ways of committing,	456
Staggers in Horses,	463
State Shows, 1856,	474
To Subscribers,	473
Tanning and Currying,	449
The prospect of the Wheat crop,	476
The Horse,	468
Wood Screws,	450
Worth Knowing	456
Wine, &c.,	461
Wheat Cutting,	463
Work for June,	477
Yapon Tea Plant,	460

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,
Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,
All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,
Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

FARMER'S HALL, RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

W. L. POMEROY, PUBLISHER, BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND
SCHOOL BOOKS,

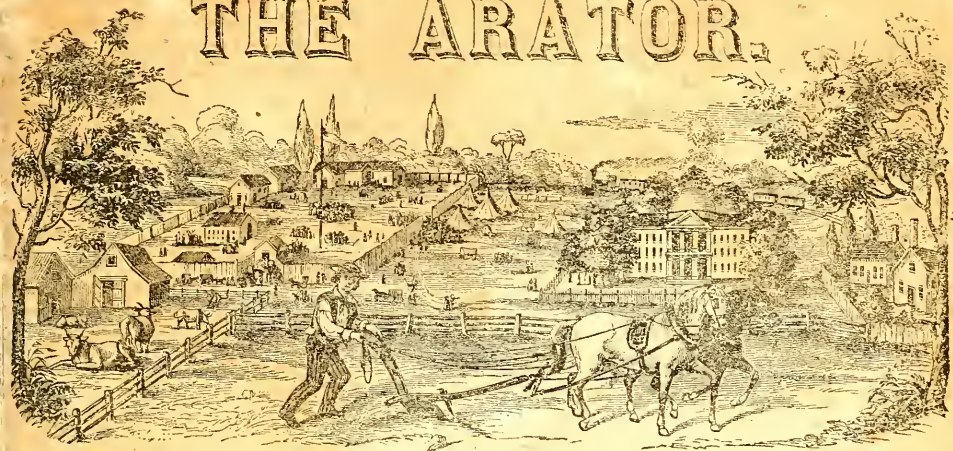
AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including Records for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dispatch at this office.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, JULY, 1856.

NO. IV.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, Editor & Proprietor.

TERMS.—Published on the first of every month, ONE DOLLAR A YEAR, invariably in advance.

Advertisements, not exceeding twelve lines each and every insertion, one dollar—containing more at the same rates.

DESCRIPTIVE CATALOGUE

Peaches that have been tested by actual bearing, previous to and during the year 1855, by JOSHUA LINDLEY, New Garden, Guilford County, N. C.

[Continued from page 445.]

DESCRIPTION OF PEACHES—1855.

10. *Early Newington F.*—This is decidedly the best peach that immediately succeeds the Early York. It is rather large, nearly round; color red, truly all over—paler with marbled dots on the inside. Its flesh is rich, very juicy, vinous and sweet. It is a good bearer, grows thrifty, and deserves to be cultivated more extensively than any other Early Newington. It separates from the stone with difficulty—even when fully ripe, and might be considered a cling. It has uniform glands and small flowers—and commenced ripening the 24th of July.

11. *Early Strawberry.*—A rather large free-stone peach, of fine quality, rather streaked or blotched with red on a greenish white ground. The tree is a mid grower, with globose glands and small flowers. Ripe 25th July.

12. *Palo Alto.*—A rapid, thrifty growing tree—and a beautiful red fruit, of rather large size and good quality—serrate leaves and small flowers. Ripe 25th July.

13. *Walter's Early.*—This is a thrifty growing tree, and excellent fruit. It is of a pale greenish white ground, with a red cheek—flesh is rich, juicy and fine flavored, and ripens its fruit about the 26th of July. It has globose glands with small flowers, and deserves to be cultivated as one of the best that immediately succeeds the Early York.

14. *Large Red Nutmeg or Brown Nutmeg.*—This I received as an early kind that ripened before the Early Anne—but it does not ripen till several days after it, and the Early York ripens, and being of a dwarfish habit, and rather thin bearer, and inferior in every respect to the Early York, it is not worthy of cultivation.

15. *Grosse Mignonne.*—This is a thrifty growing tree, with globose glands and large flowers, and it bears very young and most abundantly, so much so that the fruit must be thinned in full bearing seasons to enable it to ripen its fruit to perfection.—The fruit is rather large, mostly of a red color on a greenish white ground, and rather compressed in shape, but nearly round. It is rich, juicy and fine flavored, and though described by all authors as one of the finest of all peaches, it does not yet come up to that high character with me. But my trees are very young, and it may yet sustain its high character, when it arrives at mature bearing. At any rate, it is one of the most hardy, young, any regularly

productive kinds, and deserves to be extensively cultivated. Ripe 26th July.

16. *Large Mignonne*.—This fruit I received for the Grosse Mignonne, but its small flowers soon proved it to be incorrect. It is of rather large size, nearly round, with a red cheek. It is rich, juicy and excellent—with the flavor of roses. It does not bear full when young like the true Grosse Mignonne—but afterwards becomes a good bearer, and deserves to be cultivated for the fine quality of its fruit. Ripens with the other.

17. *Early Purple*.—This fruit I received for the Early Purple, but it proves to be identical with the Grosse Mignonne in its foliage, flowers and fruit.

18. *Doering's Sweet Water*.—This variety I received as an early variety, to ripen eight days before the Early York. It is a nice white fruit, of rather small size, and good quality. The tree is rather dwarfish in its growth—has globose glands and large flowers, and is very productive. But as it does not ripen till after the Grosse Mignonne, and all described before it, it is of no value.

19. *Red Rare Ripe*.—This tree grows thrifty, with serrate leaves and small flowers. The fruit is rather large, rather oval, color red on the sun side, mostly with pale red marbled on the opposite side—flesh rich, juicy and fine flavored, and though it does not bear full when young, it has the reputation of a good bearer, and deserves to be cultivated extensively.—Ripe end of July.

20. *Red Magdalen*.—This tree grows thrifty—has serrated leaves and small flowers. The fruit is rather larger, rather more round, and of a deeper red color, and rather finer quality than the Red Rare Ripe. The tree is also of a more thrifty growth, with deeper green foliage—and is also a much greater bearer when young. Ripe at the same time.—Thomas, in his work on fruits, differs from me with respect to these fruits. If I have them transposed, I wish to be corrected.

21. *Large Early York*.—This is a tree of the most thrifty and rapid growth, with globose glands and small flowers. The fruit is rather large, color mostly red on a pale greenish white ground; the flesh is rich, sweet, juicy, vinous and excellent. The tree bears thin when young, but with mature age becomes a great bearer. It is highly worthy of extensive cultivation. Ripe twelve days after Early York.

22. *Large Orange C*.—This fruit I received for the Large Orange C. It resembles the Red Rare Ripe in all respects.

23. *Bergen's Yellow*.—A large oval fruit, yellow with a red cheek, and of fine quality. But the tree is a slow grower, and thin bearer. Ripe 28th July.

24. *White Imperial*.—A beautiful white fruit—touched off with red on the sun side. It is of rather large size, nearly round form. The tree is quite thrifty, has globose glands and small flowers, and ripens its fruit at the end of July, and the fruit is sweet, rich, juicy and excellent.

25. *George 4th*.—This is a tree of the most thrifty growth, with globose glands and small flowers, and is one of the best and most regular bearers, and as far as my experience goes, never overbears. The fruit is rather large, of nearly a round form, color a pale yellowish white with a red cheek—flesh very rich, juicy, sweet, fine flavored and excellent—being equalled by few and surpassed by none. It is a peach of the very finest quality, and is as it should be, extensively cultivated. It usually ripens its fruit from the 10th to the 15th of July to the 1st of August.

26. *Bellegarde*.—This is a fruit of the finest quality, and the tree is thrifty and productive. The fruit is large, nearly round, of rather a dark red on the sun side, with paler marbled red on the shade side. It is rich, juicy, fine flavored and excellent—and scarcely surpassed by any other fruit. It has globose glands and small flowers, and is highly worthy of extensive cultivation—and the fruit ripens at the end of July.

27. *Montauban, (Double Mountain)*.—This is a fruit of the finest quality—being of good medium size—round form, of a greenish white color touched off with red next the sun—flesh rich, juicy, fine flavored and excellent. It has serrate leaves and large flowers, grows thrifty, is a great bearer, and deserves to be cultivated extensively. Ripe end of July.

28. *Coolidge*.—This is a tree of thrifty growth with globose glands and small flowers, and is a great bearer. The fruit is of full medium size, round, greenish white with a red cheek. It is a fruit of good quality, but is rather acid with lack of richness and flavor. I may not have the true kind.—Ripe end of July.

29. *Noblesse*.—This is a large fine fruit of most excellent quality—and the tree is a thrifty grower, great and constant bearer. The fruit is large of a roundish, oblong form, of a pale yellowish white color touched off with some red stripes on blotches next the sun; the flesh is white, rich, juicy and fine flavored, being one of the best and most valuable of peaches, and deserves extensive cultivation. It has serrated leaves and large flowers, and ripens toward the end of July.

30. *Royal George*.—This tree I received for the Royal George or Red Magdalen; but its globose glands soon showed me that it was not the true kind. I have since received the true kind, which I have described under its true ancient French name. Red

Magdalen. But this I have continued to cultivate under the name of Royal George, as I have not yet been able to identify it with any other. It is a tree of the most thrifty growth, and one of the greatest bearers of any of the small flowers. The fruit is rather large, nearly round, of a nice red color on the sun side, and marbled with paler red on the shady side—flesh rich, juicy, fine flavored and excellent—it being one of the best, and is highly worthy to be extensively cultivated. Ripe end of July.

31. *Early Red C.*—This tree grows thrifty, with serrated leaves and small flowers—fruit rather large, round, of a deep red color all over—flesh rich, juicy and excellent; and the fruit annually ripens from the 10th to the 20th July. This is the best very early cling, a great bearer, and deserves extensive planting.

32. *White Newington C.*—This tree is one of the most thrifty growth with globose glands and small flowers; the fruit is large, round, of a yellowish white color, with some touches of red next the sun; flesh rich, juicy, and excellent; and though the tree does not bear full when young, it soon after becomes a great bearer in full bearing years. Ripe 20th to end of July.

33. *Early Admirable.*—This tree grows thrifty—has globose glands and large flowers—the fruit is rather large of a pale yellowish white color, with some light touches of red next the sun; flesh rich, juicy and fine. The tree is a great, sure, and hardy bearer, and may be cultivated profitably. Ripe 26th to end of July.

34. *Yellow Alberge.*—This tree grows thrifty, has globose glands and small flowers; the fruit is large, round, yellow, with a red cheek; the flesh is rich, juicy and fine. It is a good bearer, worthy of extensive planting, and ripens its fruit from the 26th to the end of July.

35. *Early Newington C.*—This tree grows thrifty, has serrated leaves and large flowers. The fruit is of medium size, rather oval, of a pale yellowish white color, with some touches of red next the sun; flesh rich, juicy and fine. It does not bear well when very young; but as it blooms very late, even after the latest frosts, generally, it may yet at mature age be a great and sure bearer, and deserve to be planted extensively. It ripens from the 20th to end of July.

36. *Resaca.*—This is a very thrifty growing tree, with globose glands and large flowers. The fruit is large, nearly round, of a pale yellowish white color, with a red cheek next the sun, frequently marbled with red on the shade side. The flesh is rich, juicy, fine flavored and excellent; the tree bears well, and deserves to be cultivated. Ripe 26th to end of July.

37. *Yellow Rare Ripe.*—This is one of the largest

and finest of our early peaches. The tree grows very thrifty, has globose glands and small flowers. The fruit is large, of a round form, rather lengthened at the top; color yellow with a deep red cheek;—flesh yellow, rich, juicy, sweet and excellent. The tree is rather a thin bearer only in full bearing seasons, but its large size and great excellence renders it worthy to be extensively propagated. Ripe 20th to end of July.

38. *Early Lemon C.*—This tree grows thrifty, bears abundantly, and deserves to be extensively planted as the earliest yellow cling. It is of large size, yellow with red next the sun; flesh rather rich, somewhat juicy, sweet and fine. Its leaves have uniform glands and its flowers are small. It was raised from seed of the Lemon cling,—is not equal to its parent—but ripens ten days earlier which renders it valuable. Ripe 20th to end of July.

39. *Stafford's Rare Ripe.*—A large and valuable fruit of the Red Rare Ripe class. The tree grows thrifty, has serrated leaves and small flowers, and bears well. The fruit is rather large, round, color mostly red on a greenish white ground; flesh rich, juicy, sweet and fine. It ripens from 13th to 20th of July.

40. *Monterey.*—This is one of the most magnificent of our early peaches. The tree grows thrifty, has uniform glands and small flowers. The fruit is large, nearly round, of a deep red color, on a pale greenish white ground. Flesh rich, juicy, sweet, vinous and excellent, is a good bearer, and one that deserves to be extensively cultivated. Ripe toward the end of July.

41. *Flushing.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is rather large, of a roundish oval form, of a pale yellowish white color, a little touched with red. Flesh rich, juicy, sweet and excellent, it being one of the finest and one of the most productive kinds, and is highly worthy to be cultivated. Ripe 26th to the end of July.

42. *Orange F.*—This is rather a large fruit, of a roundish oval form, with a long point at the top; color pale yellowish white, with some touches of pale red; flesh rich, juicy and fine. The tree grows thrifty, has globose glands and small flowers, is a great bearer and may be profitably cultivated. It ripens about the 1st of August.

43. *Hyslop's C.*—This tree grows thrifty, has globose glands and small flowers. The fruit is large, round, mostly of a red color on a white ground.—The flesh is rich, juicy and excellent. Prince says that this fruit is to New England what the Heath C. is to Virginia. Here it ripens at the end of July and first of August.

44. *Early Crawford*.—This is one of the most popular early peaches. It is a beautiful peach when at perfection, and also one of excellent quality, and it is also a great bearer. It is large, of a rather long form—color yellow, with a red cheek—flesh rich, juicy and very good—but not of the highest quality—but still it is a superior peach, and from its hardy character and great bearing, deserves to be extensively cultivated. The tree grows thrifty, has globose glands and small flowers, and the fruit generally ripens from the 26th to the end of July.

45. *Vanzani's Superb*.—This is a tree of very thrifty growth, with globose glands and small flowers, and is a good bearer. The fruit is rather large of a slightly lengthened form, color pale greenish white with a marbled red cheek next the sun. Flesh rich, juicy, light flavored and excellent—it being one of the best that immediately succeeds the George 4th. Ripe toward the end of July.

46. *Barrington*.—This is a moderately thrifty, regular growing tree, with globose glands and large flowers. The fruit is rather large, a little lengthened, of a pale greenish white color with a dull brownish red cheek—flesh rich, juicy, fine flavored and excellent. The tree inclines to spread low, and is one of the hardiest, sure, and abundant bearers, giving us a crop of fruit when almost all others fail. It ripens the last of July to 10th of August.

47. *White Blossom*.—A beautiful pale yellowish white fruit, of medium size—flesh rich, juicy and fine, and ripens its fruit end of July. It has uniform glands and large flowers, and bears well.

48. *Snow*.—Very similar to the White Blossom in every respect, only rather larger and ripens near a week later, and has small flowers. It is a great bearer.

49. *Monstrous F.*—A large peach of good quality. The tree grows thrifty, has globose glands and large flowers, and is a great, early and constant bearer; color pale yellowish white with a dull red cheek. Ripens 1st of August.

50. *Admirable F.*—A tree of very thrifty growth with globose glands and large flowers. The first is large, round, of a white color with a red cheek next the sun—flesh rich, juicy, fine flavored and excellent, and the tree is a very good bearer, one of the best of peaches, and deserves to be largely cultivated. Ripe end of July to 10th of August.

51. *Belle de Vitry*.—This peach appears to be nearly the same as the Admirable. The fruit is perhaps a little more lengthened, and a little later than the Admirable in ripening.

52. *Harper's C.*—This tree grows thrifty, with serrated leaves and small flowers. The fruit is

large, nearly round, color yellow with some red next the sun—the flesh is rich, juicy and fine, and it bears well, and ripens toward the end of July.

53. *Brevort*.—A tree of thrifty growth with globose glands and small flowers. The fruit is white with a red cheek next the sun, not quite round, but rather lengthened in form, of medium size—flesh rich, juicy, vinous and excellent. It is a good bearer, but rather too small for cultivation for a market fruit. Ripe middle of August.

54. *Large Rare Ripe—Morris' Red*.—This is a thrifty growing tree, with globose glands and small flowers. The fruit is large, nearly round, of a pale greenish white color, with a red cheek next the sun. It is rich, juicy and fine, and a good bearer. Ripening the first half of August.

55. *Lemon C., Pineapple C.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is large, nearly round, but slightly lengthened; color yellow, with a deep red cheek next the sun. The flesh is rich, juicy, and fine flavored, and the tree bears well. This fruit is very popular and deserves to be so. It ripens early in August.

(To be continued.)

PEAR BLIGHT.

MESSENGERS. EDITORS:—Will you through the columns of your very instructive journal, the Country Gentleman, inform me, and a numerous class of readers interested in pear culture, of the comparative hardness of the following varieties. What I mean by hardness, is security against fatal blight, for with me even the Seckel and White Doyenne are sometimes slightly affected, and I may add that I regard the Winkfield the most tender of all that I have any experience with, having never been able to save a tree of that variety that was once attacked:—Lawrence, Aremberg, Winter Nelis, Glout Moreau, Easter Beurre, Winkfield, Beurre d' Anjou and Flemish Beauty,—and the stocks best adapted to each. A SUBSCRIBER. Geneva, N. Y.

A great deal of experience is required to establish the character of a variety in relation to the blight—a disease so strikingly capricious and uncertain, and variable in its preferences and attacks. General observation, however, concurs in ascribing to the Glout Moreau the greatest liability to blight in the nursery row, and to the Madeleine, in the orchard or with larger trees. The Bartlett and Winkfield are also found to be very liable. The others in the list named, more generally escape.

The Lawrence, Aremberg, Winter Nelis, and Flemish Beauty, are best on pear stocks, although the two first will do tolerably well on quince. The Glout Moreau is perhaps best on quince, and the Winkfield and Anjou succeed well on both.—Country Gentleman.

THE BORER—PEACH ORCHARDS.

MESSRS. EDITORS :—I wish to ask the best means, if there is any, for the extermination of Borers in trees, and the mode of treatment to trees, that have been affected by them. Also what is best to plant in a peach orchard, that is, what would be apt to thrive the best, and prove the most advantageous to the trees. A. G. *Ashland, Mass.*

The borer, which perforates the wood, and in time makes it like honey-comb, killing the tree, may be destroyed by punching it to death in its hole, with small flexible twigs. The peculiar crushing sound will show when the insect is reached. We have known many badly affected trees restored in this way. They must be timely and constantly watched. "The price of [fruit trees] is eternal vigilance." It is said a mixture of a pint of sulphur, a gallon of soft soap, and enough tobacco-water, to soften it to the consistence of paint, will exclude the borer, if applied before it enters.

Exclude all grass and sowed grain crops from peach orchards—potatoes, turnips, and beans will do pretty well, but a clean, mellow, bare surface, made by plowing and harrowing is best.—*Country Gent.*

HARDINESS OF PLUMS.

Is the M'Laughlin plum hardier than the Jefferson and Autumn Gage? Last fall I bought about seven hundred fruit trees, and among the lot were a few plum trees. I now find the Jefferson and Autumn Gage are dead, and the M'Laughlin alive. J. PERINE. *Norwich, Ct.*

Much depends on circumstances, as to the hardiness of plums. Sometimes a wet summer will keep up the growth and prevent proper ripening of the wood, and in such cases comparatively mild winters have occasioned more injury than the most severe on well matured shoots. Again, those on wet spots of ground will be more injured than on drier. We have never known the Lombard plum tree to be the least injured by cold—it appears to be as hardy as a sugar maple. The Red Gage is also hardier than most others. The M'Laughlin has generally proved about as hardy as the Jefferson. The Imperial Gage, Columbia, Lawrence Gage, Huling's Superb, Red Diaper, Washington, and others, are rather more liable to injury. The observations of others, in relation to this subject, would doubtless be interesting.

Ibid.

"FATHER," said a cobbler's lad, as he was pegging away at an old shoe, "they say that trout bite good now." "Well," replied the old gentleman, "stick to work, and they won't bite you."

ECONOMY IN THE USE OF LAND.

EDITOR AMERICAN AGRICULTURIST :—When by chance so placed that I can get sight of the small plots, as well as the city lots of ground that border the numerous new villages on the line of the Harlem and Hudson River Railroad—also those situated on the out skirts of this city and Harlem, and notice the vast aggregate of surface without tree or shrub, choice plant, or fine vegetable, I cannot help exclaiming to myself, "What a want of economy in the use of land!" What a loss of comfort, of pleasure, of income, from bad management. I wish to address myself at once to the occupants and owners of these small, yet very valuable plots of ground. Why do you not dig up the weeds, briars and brambles—drain out the mud holes, the fever "sinks"—draw off the water, if any is stagnating there. Do it yourself at "early morn and late at eve," if you cannot hire a man to do it, and my word for it, you and your family will be the happier for the improvement, and before many days your appetite for breakfast, and your sleep at night, will both receive a new relish.

Give the ground a most thorough breaking up, rip out every root and branch of improper growth. Then put on any black soil that lines the border of every road and avenue in the vicinity. Place a "pile" on your plot of ground. Spread it over and spade it in perfectly. Now my friend, you are ready for filling your grounds with many comforts. Begin by surrounding the border of the plot with grape vines. They take no room. Plant them six or seven feet apart, and if well planted and carefully cultivated, they will in ten years, yes, in five, supply the family with most delightful fruit. If trained high and well fed with pounded or ground bones, soap-suds, &c., they will, in addition to supplying your own wants, from the sale of surplus fruit, often pay the interest on the cost of a cheap lot; while you get a sight of the graceful elegance they display, when folding their tapering arms around the objects that support them; and their cooling shade you get in the bargain. Plant the Isabella and Catawba vines. They are sure bearers all through the lower part of New York, and surrounding States, South, East and West, and the Isabella everywhere.

Dig a large hole three or four feet across and one and a half or two feet deep. Then fill it up again with rich dark soil, with ground or pounded bones, and street manure to within nine inches of the top, next put in two or three inches of soil, and put in your vines. Spread out the roots, cover them and fill to the top with good earth. Keep them well watered with all the wash of the house, applied cool, allow but two or three branches from each vine to grow, rub off all the others, and in a few years you

will behold a monument of your industry staring you in the face, with smiles and tears---when the fruit is ripe and the morning dew covers the foliage.

Stop not here! Plant some curiosity; Gooseberries that bear the large fruit, and if you have room the Raspberry, Blackberry and a fine bed of Strawberries. You can get these plants very cheaply, the latter from those who are thinning out old beds, for a trifle or the asking. They can be bought cheap at all the seed stores and nurseries. Plant a few peach trees, also plum and cherry if you have them. Or if you prefer a grass plot to whiten the "linen" upon, sow a square plot in the centre of your grounds, with timothy, red top and white clover, spreading a little wood ashes over it, and soon you will have a grass plot---"that is a grass plot."

Your grounds are not full. Plant some choice rose bushes, Carnations, Pinks, and the Lilly of the Valley. If you have more than a city lot you can also raise some vegetables for the table. Lettuce, onions, cabbages, potatoes, peas and beans. Be sure to have some roses blowing *out* of the house, and you will soon find some budding within.

Your wife and children will take pleasure in walking out and helping you plant, nurse and enjoy the good things you are bringing forth to brighten the sunshine of the heart, to warm the affections, to make your children lovers of Nature---the noble, the elegant, the graceful, the beautiful in her Kingdom. The study and the practice in these things expand the intellect, elevate the sentiments, and ameliorate the heart. If there are young ladies here, they will not spend the day talking about dress, the number of hoops and flounces that should be introduced to make it the pink of the fashion, the fixings for the ball, the cut and the style---whole days in shopping and spending money that can't well be spared, and sure to lull Nature's golden charms to sleep and death: wraps them in sackcloth and covers them with the ashes of their former greatness; strips the fruit and foliage through neglect of culture. And if allowed to enter the sacredness of those enclosures, this little garden would be stripped of its comforts and delights. The weeds and briars and thorns would come over it. But the change would not stop here: it would enter the portals of the dwelling and fill the garden of the mind, the affections, and the heart with the charms of their own deformity. Let us keep these things from the lots and the plots---and grounds we are cultivating---from field and valley, from country life altogether.

Yours Mr. Editor is a happy task to direct the taste, to open new sources of enjoyment, that never tire, that confer happiness upon him that gives and him that takes, that afford present enjoyment while educating the mind with a taste, a relish, for those heaven-born pleasures that do not wear out with the using.

C. T. R.

THE PEA FALLOW---COMPOSTS, &c.

We wish that our readers may not lose sight of this subject of the Pea culture. We mean of course, the Indian, or field, or cow pea, as it is variously called.

Our friend, Mr. Hewlett of Baltimore Co., who for a number of years has made the pea crop a part of his rotation, is a zealous advocate of its culture. We have great reliance upon his judgment in all matters relating to practical farming, and he assures us that he thinks the pea fallow the very best preparation (a clover ley not excepted) for the wheat crop. His own crop of wheat for six successive years has been an average of thirty-five bushels per acre---land and grain both measured, and we think his opinion as to the modes and methods of making wheat grow ought to be worth something. Mr. H. has induced a number of his friends to introduce the pea fallow into their rotation, and shows us a letter from a gentleman in Virginia who sowed two hundred bushels last year, and who assures him that up to that time the appearance of the wheat upon his pea fallow is decidedly better than that which was guanoed. We have the testimony of several of our own friends to the same effect, and who prefer, after several years experiment, a fallow of pea vines; the pea vines being sown when the corn is laid by, to the same land sown with the ordinary dressing of guano. Mr. Hewlett's practice, however, is to sow in the month of May the corn ground of the previous year, and plow down in August for early seeding. In his zeal he last year sowed a crop when he laid his corn by, and means to sow the same ground again for the fall fallow. Clover seed, orchard grass, and timothy are sown upon the wheat ground, and the grass crop continues as long as may suit his purposes. The pea fallow dispenses with the clover fallow and gives the corn crop the advantage of the grass sod. His corn crop of last year exceeding fourteen barrels per acre. Mr. Hewlett's correspondent suggests that he made a mistake last year in sowing too early---the grass starting with and injuring the pea crop. The grass should be well started first, and we suppose in this latitude the last week of May is quite time enough to sow.

We do not mean to be understood that Mr. Hewlett has relied solely upon the pea fallow for the improvement of his land and his crops. On the contrary he has made diligent use of many of the most improved fertilizers. He understands and appreciates them. But he is moreover an interested, careful observer, and an accurate calculator of costs and results. He does not work showy sums from imaginary figures, but gets his data from the surveyor's chain, the half bushel measure and the corn barrel.

The result of his calculations upon this subject is, that he is indebted to the pea fallow for his uniform success, and for ten to fifteen bushels per acre of his wheat crop. So that we wish it understood that while the pea vine is peculiarly valuable to the poor land farmer, growing where no other plant would be worth the labor and cost, and greatly benefitted by the small application of a bushel of plaster per acre yet it is not a mere make shift for poor land, but entitled to a very high stand in our list of fertilizers.

The determining the value and introducing into our system of cultivation the use of fertilizing plants, is a matter of very great importance. We know it is a favorite recommendation to rake and scrape, and gather and haul together all sorts of stuff to some point where the cattle are to trample it for a while, and drop a small portion of very poor manure upon it. In the spring, when there is the largest amount of work to do, and the team the least able to do it, this conglomeration, *rudis indigestaque moles*, is to be chopped and forked and hauled to the field, where it is to be again forked and spread upon the ground. And after all this marching and counter marching, up the hill and down the hill, how many a high spirited young farmer who would come up to the requirements of his advisers, groans over the inadequate and insufficient quantity of even such manure to meet the necessities of his crops.

We hear sensible men say, "Give us stable manure," "We want nothing better than stable manure." We say so too. We say, give it to us, and we may emulate the daughter of the horse leech in our cries of "give," but who will give it, or where is it to come from?

A great deal of excellent advice is written upon the preparation of composts, their application and use. This is very well. It is a matter which every cultivator should understand, because every one will have more or less use for them. But let it be remembered that a great portion of what is written upon the subject comes from Northern Journals which circulate through the neighborhoods of cities, towns, manufacturing villages, &c., where their agriculture is a system of garden, orchard and lot culture, compared with that of the country at large, and where it pays to apply a large amount of labor to a small extent of land. And in other sections let it be borne in mind that it is offered as useful information which may be used or not as each man's circumstances render it proper. The agricultural journal or book is not to be looked to for circumstantial directions, but for suggestions and principles which the individual practitioner must apply to the case he has in charge.

Let it be recollected that almost universally our agriculture exhibits a large extent of land, and small

supply of labor. Land is cheap and labor dear. It is the necessary result of our wide domain and our thin population. It has always been so, and will continue to be so until the vast continent is in some measure filled up. The recommendation to divide and make smaller our farms, is very well for an individual remedy, but one neighborhood or county or State is subdivided at the expense of another, and the remedy is not and cannot be general. It is easy to find a purchaser for one or two or a dozen farms, but make it ten thousand and the case is different.

It is folly then to preach against a condition of things which, however inconsistent with our preconceived notions of what ought to be, is the inevitable result of natural causes. Talk as we will against large farms, as every king extends his territories, so every little sovereign of us will extend his boundaries while our present facilities exist, and men will have large farms, until reproduction and immigration shall elbow them into closer quarters. That day is far in the future. Let us then take things as we find them, and adapt to them our methods of improvement. Instead of insisting that men should have smaller farms, help them to improve the large ones. Show them how to keep up their lands, or else they will do as they have done before, abandon them and go where land requires no manure. Do not press upon them a method of manuring suited only to a small surface and abundant labor, as in England and about cities and manufacturing towns. Treat all the talk and all the writing about manuring with composts and home made manures as chimerical, as mere fancy---as an idea having existence only in the brain of schemers, and out of the question in practice---as a thing which however desirable in itself, will not and cannot be. Let no man fail to husband all the offal of his crops and apply them to his lands. If he has resources on his farm beyond that, let him ascertain their value, and judge for himself as to what extent he may use them. There may be many exceptions to a general rule; we are speaking of a general system of manuring. But even with the offal of his crops, his straw and stalks, &c., where is the necessity of passing them through the barn yard, to be handled and hauled and handled and hauled again? Every animal on the farm should have food, and litter enough to make him a dry bed, and absorb the liquid droppings, but on large grain farms where there is a great excess of material, there is no earthly advantage in concentrating immense masses of straw and stalks to be trod by cattle and sobbed with rain water. It is a mere heaping up of trouble against a day of trouble. The sooner the manuring matter is put upon the soil the better for the coming crop, and all that is not required for food and litter should be taken directly and spread where

it is wanted. Nor is there any sort of occasion for accumulating manures with the necessary amount of litter, in stables and yards, to be carried out carefully at the busiest season, and spread before the plow, and turned under immediately "or sooner," according to the stereotyped directions for such cases made and provided. They may be, and should be, taken away from time to time before they accumulate, and spread out upon grass land or corn land or wherever there is occasion for them. We know that teachers of science shake their heads over the wanton waste of ammonia, but we cannot help it. We know that these suggestions will stand the test of trial, and practical men must stand by their facts. If the doctors do not understand how it is, let them bide their time. By and by, when Science becomes more familiar, she will explain it to them.

The eagerness with which farmers have purchased guano, shows plainly enough that they understand the value of manure, and are willing to give for it a reasonable consideration. Labor they cannot give for it, because they have only enough for their other necessary purposes; money they will give when there is a fair prospect of return. The labor of application in the case of guano, bones, &c., is comparatively nothing. But in the purchase of guano, they take into consideration, that unless in much larger quantity than is usually applied, it has little effect beyond the present crop. And with regard to the other fertilizers, the uncertainty of their effect, and their varying quality, will necessarily require a long time to establish any of them. Agricultural chemists profess to tell to what soil each variety is applicable, but the results of their labors make a small show as yet. Want of knowledge on their part, or want of confidence on the part of farmers, or both in some measure, interfere with their success.

With no design to depreciate or disparage the modes of manuring by material collected on the farm, and by the fertilizers to be had in the market, we wish them to keep their true character as *valuable auxiliaries* to the great method of manuring by fertilizing plants. We wish to keep it prominently and distinctly in the view of young farmers, that this is the method peculiarly adapted to our farming system. It is *economical, effective, universally applicable and requires very little application of labor.*

Its economy consists in husbanding upon every acre of land the provision which a bounteous Providence makes for every part of His domain. The plant adapted to the purpose strikes its long roots into the subsoil, and brings up the hidden stores of minerals which when most fit for food are carried by rains beyond the reach of the plow or the range of ordinary plant roots. It spreads its broad leaves in

the atmosphere, and gathers from the fragrant breeze, the silent dews and the refreshing rain drops, treasures of wealth. This very ammonia, of which the most learned sons of science tell us the earth and air is full, but with which, to make it available, they disquiet themselves as yet in vain, is quietly gathered and stored away in its mysterious organization. Gases and minerals, organic and inorganic matters, it gathers and elaborates and puts in position for use. And then in its maturity it shields the bosom of its nursing mother from blasting wind and scorching sun, and whatever the dews and rains and snows afford is preserved from a wasteful evaporation. That this method of manuring is effective, the turnip culture of England and Scotland, and the clover culture of those countries and of sections of our own, bear ample testimony. It is applicable wherever plants of any sort will grow. But its value above other methods, lies chiefly in the very small cost of labor or money which it requires. In some cases the labor is the mere casting of seed upon the ground prepared for other crops, in others a single light furrow upon land recently cultivated, with the cost of a dollar or two per acre for seed. We think we are not over zealous in urging the cultivation of fertilizing plants as especially adapted to the peculiar features of American agriculture and as the ground work of improvement.—*American Farmer.*

SUPERPHOSPHATE ON CORN.—The Editor of the Virginia Farmer, gives the result of an experiment made by him with De Burg's super-phosphate, by which he says, he added 20 bushels corn to the acre, by the application of 100 lbs. The field was an old worn clay soil; the super-phosphate was first mixed with an equal quantity of dried pond mud, and a slight sprinkling of plaster. A hand followed (or preceded) the corn droppers, and dropped about a tablespoonful of the manure in each hill. The difference where it was dropped, and other portions of the field where no manure was applied, was apparent from the time the plants appeared through the whole season. The super-phosphates cost him in New York \$45 per ton of 2,000 pounds, and \$10 additional for freight to his farm in Virginia. He estimates the 100 lbs. to have cost him \$5.50, and he allows 50 cents more for mixing and applying—so that, to say nothing of the virtue left in the soil, and gain in fodder, he actually obtained 20 bushels of corn, worth \$10, for an outlay of \$6, which is a clear profit of 66⅔ per cent.—*American Farmer.*

The Alabama State Agricultural Society will hold its next annual Exhibition on the 11th of November, to continue four days. A valuable premium list has been made out, amounting to near \$5000.

IRRIGATION.

MANY writers on agriculture have been unanimous in urging the importance of irrigation, especially on soils which are naturally dry, and susceptible of being affected injuriously by drought; and in many situations, it is certainly to be regarded as one of the most useful and important operations which come within the province of the farmer. Water, or, at least, moisture, is one essential condition of vegetation; for water, either directly or by its decomposition, contributes to the nutrition and sustenance of every cultivated plant, as well as to the vegetable world in general. This fact, and the importance of irrigation as a branch of agriculture, was well understood by the ancients. Homer, in the *Iliad*, says, in allusion to the subject:

—“The peasant with his spade, a rill
Conducts from some pure fountain, through his
grove
Or garden, clearing the obstructed course.”

And in the *Odyssey*, when he describes the wonderful beauty of the gardens of Alcinoüs

—“Amid
The lovely scene, two fountains welling forth,
One visits into every part diffused,
The garden round.”

And Virgil, in his *Georgics*, expresses himself in very much the same manner, while most of the ancient writers, historians, as well as the children of Parnassus, have recorded innumerable instances of its adoption in oriental countries, as a means of vegetable enrichment, and sustenance to crops.

In China, it has been practised from the most remote epoch of which the historical records of the country furnish any account. In some parts of Asia, particularly at Mysore, irrigation, as a branch of agriculture, is under the express auspices and control of government. In the Milanese territory, it is probably adopted to a greater extent than in any region, and ditches, tunnels and canals are everywhere seen running in every possible direction through lands, the unsurpassed beauty and luxuriance of which attest most conclusively, the advantages resulting from their efforts. These life-giving veins were opened centuries ago, and the continuance of an adequate supply of water in them for all the numerous and multiplied purposes of agriculture, is still, more than formerly, an object of popular solicitude. So highly, indeed, are the advantages resulting from this universal diffusion of water estimated, that the canals and viaducts embraced in this system of general irriga-

tion, are placed under the jurisdiction of the government, the same as are the highways.

The wonderful fertility of Egypt, or that part of it rather, which is known by the appellation of the “Delta,” bordering upon the river Nile, and periodically submerged by the exudation of its waters, is proverbial. “To this river,” remarks a celebrated traveller, “Egypt is indebted for its fertility and happiness; for as it seldom rains in the inland parts of the country, and the soil is naturally dry, if the lands were not annually watered by its overflowing, Egypt would be one of the most barren regions in the world.”

Water, in almost all cases, contains fertilizing particles which are exceedingly beneficial to vegetation. When water has stood for a considerable length of time on the surface of the soil, it is found to be pregnant with nutritive matters, which it has imbibed during its quiescence, and which are in a condition to act beneficially, and with great energy, when applied to plants or crops of any kind. The water conveyed by rills and streams, is never without fertilizing powers. When applied by irrigation it does not only supply a necessary and indispensable condition of vegetable life in furnishing a solvent for the inert and soluble matters already contained in the soil, but it supplies the actual food of vegetables in a state of solution, and consequently ready for their immediate appropriation and support.

There is no substance that enters into the organization of the living system of plants, that can be taken up by the roots, as food, except in a state of solution. Hence the powerful effects produced by copious and frequent irrigation in seasons of excessive drought, and when the natural supplies of the soil are so far exhausted as to cause it to parch, and the soluble humus contained in it, to become dry and incapable of yielding its juices to the roots it is designed by nature to supply. In many places, the natural facilities for introducing a system of general irrigation, which would subserve the wants and supply the necessities of a whole community, as in the cases above mentioned, are not to be found; yet there are a great many farms at least, that might be effectually and permanently irrigated, at very small expense. It is already done, in some instances in our knowledge, with the happiest results.

That irrigation and thorough draining must go together, we are aware, and to establish a complete system would be a work of considerable time and expense on a large farm. But the subject is one of importance, and ought to be familiar with the

thought of every farmer, so that in his annual operations he may have the object in view, and that they may have a tendency to the beginning of the work.

It seems to us that the character of our summer climate is settled—it is to be dry; so dry, that without artificial means, either of deep trenching and high manuring, or by irrigation, many of our crops must annually suffer. It is the part of wisdom, then, for the cultivator to have in view some method of averting an evil which shall annually reduce his profits and blast his hopes.—*N. E. Farmer.*

ORGANIC AND INORGANIC.

An organized body is one having organs to secure the purpose of its being. An animal has arteries, veins, nerves, and glands, a heart, lungs, stomach, &c.,—organs having functions in the economy of life. A plant has sap-vessels, secreting organs, leaves, buds and flowers. Crystals of the metals and minerals have their parts arranged by a law as definite and inflexible as the bodies themselves,—a kind of organization. A gathering of citizens becomes an organized body by the choice of moderator and clerk. A Legislature is organized by appointing a speaker and clerk.—These officers are organs by which the design of assembling is to be accomplished. But the terms organic and inorganic, as technically used in agriculture, have nothing to do with the object, design or arrangement of parts, but refer simply to the element or elements of which the body is composed. The terms, thus used, may be convenient and are easily understood. If we burn a body, those portions which become gases and fly off we call organic; those to which the fire gives no wings, we call inorganic. If we take a piece of hickory, for example, and burn, oxygen, carbon and hydrogen will fly off, and silix, magnesia, potash, &c., will remain. If you burn a cabbage stump, nitrogen will be added to the winged products by burning. If you burn a fresh burn, oxygen, hydrogen, nitrogen and carbon will fly off, and lime, phosphorus, iron, &c., will remain.—The wood, the cabbage and the bone are organized bodies, composed of organic and inorganic substances, and, so far as we know, the inorganic potash and lime are as essential to organization as the oxygen and hydrogen. The fact that when you destroy the organization by fire, one part flies away, certainly proves nothing on this point. The inorganic are frequently called mineral elements.

Were we to apply scientific accuracy to the terms organic and inorganic, we should find them, in their best agricultural use, very indefinite and faulty. All would call a piece of chalk inorganic, and yet if you burn or heat it, almost half of it flies off in this same oxygen and carbon, and the remainder is lime; and even this lime, when subjected to a higher heat, is shown to be, in part, a metal called calcium, in part this same winged oxygen. Inorganic water is composed wholly of the winged spirits, oxygen and hydrogen. So that chemistry soon brings us to elements, and of these one is just as much organic, for ought we can see, as another. But in the agricultural use of the terms, if you burn an organized body, those substances which pass off are called organic, those which remain in the form of ashes, inorganic.—*Culturist and Gazette, Pittsfield.*

From the New England Farmer. CULTURE OF ROOTS.

MR. BROWN:—Agreeably to my promise, I will now endeavor to give a concise account of my method of raising root crops, and the uses to which I have applied them. And perhaps it may be as well to give you my manner of sowing and cultivating the turnip crop, which I adopted the last season, although I have for many years raised a considerable amount of that crop, for a farmer with a moderate quantity of arable land, which will be the case, usually, in the hilly regions of New Hampshire. In the spring of 1855, I manured well one acre and five-eighths of ground and planted the same with corn; at my last hoeing, I sowed my turnip seed broadcast, after having plowed lightly between my corn rows. The time of sowing was sometime during the first week in July. In the fall I harvested from that field one hundred and nine bushels of the soundest corn which I have seen for many years; and quite late, just before the ground froze, I gathered in my turnip crop from the one and five-eighths acres which measured, as I stored them away in cellar two hundred and twenty-six bushels. I had also two cartloads of extra pumpkins on the same land. I had another small spot of ground measuring seventy-one square rods, which I sowed to wheat that I harvested sometime in the fore part of August, which when threshed, measured ten bushels of good wheat. Immediately after the wheat was cut I turned under the stubble, and after smoothing the ground, I mixed turnip seed with my grass seed, and sowed broadcast. I sowed this small field on the 15th of August. I gave this piece of

land a sprinkling of ashes at the time of sowing my last seed, and harvested from it seventy-four bushels of turnips, of the best quality that I ever saw, and they have been so considered by others who have used them for table use. My kind of turnip is the flat English. The principal use which I have made of my turnip crop, has been feed for my cattle; I think much of the crop for that purpose. I consider it a great saving of fodder, and I have had some very fine stock which I have exhibited in various fairs, and nearly all the extra keeping of the same has been turnips, which I cut with a root cutter. The grass seed sown with the turnips came up very even, and was, when small, just shaded enough to preserve the roots in a vigorous state, and when I last saw the grass before the snow fell, I thought it looked the best, and bid the fairest for a good crop the next season, of any which I ever have had. I think land seeded in this way, far better than to stock down in the spring with oats, which I find a very exhausting crop.

In the season of 1854, I found, toward the last of June, that I had a small portion of mowing land, which was so bound out, that there was no promise of a crop of hay: not even to be worth mowing. I plowed up ninety-two square rods of this land, and spread on it twelve loads of compost manure, about the 12th day of July. On the 25th day of July, "*wet or dry*," I sowed my turnip seed; and harvested from that field three hundred bushels of turnips. I mixed my grass seed with the turnip seed as above stated. Last haying season, I cut the finest crop of herds grass, on the same land which I have ever had from any other method of stocking down. The quantity of turnip seed sown by me is at the rate of one pound to an acre. I have now gone into a greater length than I intended; but it is at your election to use as much of the above as you may think proper, and in such a manner as you may please.

JOSIAH BENNETT.

Westmoreland, N. H., 1856.

REMARKS.—Mr. Bennett presented some very large and fine cattle at the national exhibition last fall, and imputed their superiority mainly to their being fed upon roots. We are glad he has given his testimony in favor of roots as profitable feed for neat stock.

A SMALL piece of paper or linen, moistened with spirits of turpentine, and put into a bureau or wardrobe for a single day, two or three times a year, is sufficient preservative against moths.

WINTER CABBAGE.

EDITORS SOUTHERN CULTIVATOR:—Every person in the South can easily grow spring cabbages, but to raise a good supply for fall and winter, is a little more difficult, and is seldom done in Georgia, except in the mountains. I admit that it is difficult during an unusually dry fall, but in most seasons it can be done with proper management and in suitable localities. The soil should be very rich and trenched or subsoiled, and as the cabbage lives, for a great deal at least, on the moisture of the atmosphere, a rich swamp, particularly near a branch, is the most desirable spot. But no matter how rich the soil is, the cabbage crop will be highly benefitted by a dressing with guano. Three hundred pounds of guano mixed with salt, and as much charcoal as any body pleases, is sufficient for an acre. It should be worked in deeply, when the land receives the last plowing previous to planting. (That the soil should be perfectly pulverized by repeated plowing, is a matter of course.) The soil must be prepared and ready for planting by the last of July.

The next thing is to have a full supply of good plants. The best varieties are: Comstock's Premium Flat Dutch; Bergen, and common Flat Dutch. I prefer Comstock's seed from Wethersfield, Connecticut, as the best and most reliable I have met with.

During the first week in June sow the seed quite thin, and water freely. The seed bed must be kept well shaded. It will not do to sow under trees; an artificial shade must be made, a kind of an arbor, covered on the top with green brushwood. When the plants have got four leaves they must be pricked out on another shade bed 3 or 4 inches apart; this will make them stout and increase their number of roots. As soon as they start to grow, take off the brushwood by degrees until the plants at last get used to the full sun.

Any time in August, when the weather suits, set out the plants 3 feet apart, which will take about 4,800 plants to the acre. *Do not pull up* the plants in the seed bed, but lift them carefully, keeping as many roots and as large a ball of earth as possible. Set them out in the evening, plant down to the first leaves, and give them a good watering "*right off*." The after culture is only to hoe frequently, and keep the soil stirred, taking care not to break off any leaves. As cabbages cannot well stand all the severe frosts in the winter, they can be kept in the following way: On a high, dry spot, (a sandy hill is preferable) dig a trench about one foot deep and as wide as necessary;—

put the cabbages down in it, head foremost, one by one, without touching each other; scatter a little pine straw or dry leaves over them and fill the trench and cabbages over with earth, leaving the stumps out. Thus one trench is to be made close to the other and the cabbages put in. If the whole place is then covered up with litter, so much the better.

Thus managed, cabbages will keep all the winter until March, and be as good as any raised in the North.

ROBT. NELSON.

Macon, Georgia, May 1856.

UNITED STATES AGRICULTURAL SOCIETY.

THE Fourth Annual Exhibition of the United States Agricultural Society, will be held at Powelton, (Philadelphia,) on Tuesday, Wednesday, Thursday, Friday, and Saturday, October 7th, 8th, 9th, 10th, and 11th.

The First Exhibition of this Society, held at Springfield, Mass., in October, 1853, was devoted exclusively to an examination of Horses;—at Springfield, Ohio, 1854, Cattle alone, were exhibited; at Boston, 1855, all departments of Farm Stock,—Cattle, Horses, Sheep and Swine, were shown.

The Society, encouraged by past success, and by the approbation of the Agricultural community, now propose to offer Premiums, not only for Domestic Animals, but also for Poultry, and the products of the Fruit Garden, the Grain Field, and the Vineyard, and for Agricultural Implements and Machinery.

Premiums from Twenty-Five to Two Hundred Dollars, amounting in the aggregate to over Twelve Thousand Dollars, will be offered for the various classes of Domestic Animals, Fruits, American Wines, Vegetables, Grains, and Agricultural Implements and Machinery.

A local Committee of forty citizens of Philadelphia, representing the various branches of industry, has already been appointed to co-operate with the officers of the Society, in perfecting arrangements for the Exhibition; and Fifteen Thousand Dollars have been guaranteed to meet expenses. This material aid, coupled with the excellence of the selected location, and the large amount of Premiums offered, induces the expectation that the Exhibition of 1856, will be superior to any of its predecessors.

Favorable arrangements for the transportation of Stock and other articles, will be made with the various Railroads.

The List of Entries, the awards of Premiums, and the Proceedings, will be published in the Journal of the Society for 1856.

The Premium list, with the Regulations and Programme of the Exhibition, will be furnished on application to Mr. John McGowan, Assistant Secretary of the United States Agricultural Society, 160 Chestnut Street, (Rooms of the Philadelphia Agricultural Society,) or by addressing the Secretary at Boston.

MARSHALL P. WILDER, President.

WM. S. KING, Secretary.

June 1st, 1856.

SUGGESTIONS FOR THE FARMER.

REMEDY FOR THE CURCULIO.—If your plum and other fruit trees are infested by the "curculio," mix yellow or Scotch snuff with lard, and apply the mixture to the trunks of the trees in the spring.

OLD TREES.—Old apple trees that have ceased to bear, should have the soil removed from the roots, the old limbs taken off, and the tops thinned out. The soil about the roots should then be replaced by an equal bulk of compost formed of the following materials, and in the following relative proportions: One eord of good muck, one-fourth of a cord of finely pulverized clay, two easks of unslacked lime, two ditto gypsum, two ditto unleached wood ashes, and one ditto salt. After filling in, cover the compost up to the collar of the tree, with straw, and confine it by a few flat stones. Then with an old hoe, scrape off the rough bark from the trunks and larger limbs, and apply after washing them thoroughly with a solution of potash water, or ashes and soft soap, a mixture of snuff, (Scotch yellow,) and lard.

BLACK WARTS IN CHERRY AND PLUM TREES.—Cut out the excreescences with a sharp knife and burn them. Wash the trunks thoroughly and apply salt above the roots. If the bark is rough, scour it thoroughly with a mixture of ashes and soft soap, and apply the mixture recommended above.

PASTURE LANDS.—Remove the stumps, stones, and bushes from your pasture ranges, and top-dress them with a mixture of wood ashes, nitrate of soda, muriate of lime, gypsum and guano. If the sod has become thin and unproductive, plow in June or September, harrow to a fine tilth, and sow on a mixture of red-top, brown-top, white clover, red clover and timothy seed. In this way exhausted pastures may be speedily regenerated, and

made to produce a luxuriant vegetation. A good pasture is a valuable acquisition to every good farmer.

TOOL HOUSES.—Erect and *finish* a commodious Tool House. Locate it near your residence, that your farming and other implements may be kept constantly under cover when not in actual use.—A work shop under the same roof will be found very convenient for the reparation of old tools, or the construction of new ones. A farmer should be able to repair and make most of the implements required in carrying on his farm. He will thus be enabled to save many dollars, and much valuable time in a single season.

AN OLD FARMER.

Hatfield, Montgomery Co., Pa.

Germantown Telegraph.

From the American Agriculturist.

MANURE ABSORBENTS.

THE last load of manure is at length cleared from the yard, the stables, the hovels, and the barn cellars. It is doing its appointed work in the field, hurrying up the potatoes, tasseling the corn, maturing the fruit, and thickening the grass. All these places are now to be filled with absorbents. The droppings of your cattle should not be allowed to fall for a single day upon the empty yard. This is a vital point in good husbandry, and is too often overlooked. It is a busy season, the crops need hoeing, haying is coming, and too often the carting of dirt into the yard, goes over to August or September. The hot months, when evaporation goes on most rapidly, is the time when absorbents are most essential. The summer sun will steal away your manure if you do not lock it up immediately, in some carbonaceous matter. This, fortunately, is abundant on most farms, and should be immediately looked up and put in its proper place. Everything in the shape of vegetable matter, dry or decaying, is a good article for this purpose. Old swamp hay, corn stalks, sea weed, &c., should be thrown into the yard and stables for the cattle to lie on.

At the foot of the hill there is a low spot, that has been receiving the wash of the highway for many years. Quite likely the loam is two or three feet deep, furnishing a large quantity of dirt.—Then, in the lower part of the meadow, there is a swale that needs ditching, in order to destroy the sour grasses, that now thrive in the wet soil. Put the ditch straight through it, and kill two birds with one stone. Then the swamp where you cut

bog hay, and pull moss to caulk the cider press, and to pack nursery trees, would be benefitted by ditching. The muck is there in great abundance, and the yard needs it.

There is also a peat bog upon your premises, quite likely covered with the swamp whortleberry, and the sweet pepper bush, which ought to have been invaded years ago. The peat quite likely is five or six feet deep, and contains all the elements of the crops you wish to grow another year.—Again, in the forest, whence you draw your supplies of fuel, there are hollows, partially covered with water in the winter, into which large quantities of leaves have been washing every year for centuries. These are very valuable deposits. The water is already gone from them. Gather up the decayed and spongy material, and drop it in the yard to absorb your manure. This, remember, is the foundation of your next year's operations upon the farm, and must not be neglected.—[Ev.]

THE BLACKBERRY.

THE common blackberry which is found growing wild in the fields and pastures of New England, is a fruit susceptible of easy and profitable cultivation. In its season, few of our berries are superior to this. It is a universal favorite, and always meets with a ready market, and at a price highly remunerative, as it costs less than the strawberry or raspberry.

In order to succeed in the cultivation of it, care must be taken to secure good and healthy bushes for transplanting, and to set them in good soil.—By the term "good soil," we desire to be understood as indicating a quality of land similar in its physical character to that from which the bushes were taken. A soil of a sabulous or sandy character is the most congenial to the blackberry, and should be filled with old, well decomposed compost, into which forest mould and leaves enter as ingredients. Charcoal, finely pulverized, and wood ashes, leached or unleached, make an excellent top dressing for the beds. If these stimulating substances are applied in sufficient quantity, there will be but little trouble experienced in securing a good and abundant crop of fruit.

But the blackberry plant, like many others, attempts to do too much. It will blossom profusely, and set three or four times as much fruit as it can perfect. As soon, therefore, as the blossom leaves begin to fall, trim out with the scissors, half or two-thirds of the fruit, or according to the amount which has set. We failed in obtaining a crop, for two or three years before we learned this lesson; but since we have thinned, have always obtained a crop.—N. E. Farmer.

COTTON PLANTING.

EDITORS SOUTHERN CULTIVATOR :—My object in life is to render all the service I can towards the proper elevating of our race, and, I believe, improved agriculture tends thereto, next to the gospel and education. Perhaps improving agriculture might rank under the latter. I do not mean to propagate error. This is only a prelude to my asking of many planters to test on a small scale and report for the good of the whole as to the following :

When bedding up for cotton do not run a centre furrow. The water furrow during the past year has been deepened by the plow, say 4 to 6 inches, and is not now too hard for roots of the cotton plant to dip down to its depth of the plowed land. By turning into water furrow two furrows and bedding thereon, one furrow is saved and there is firm earth under the plowed earth. Make good beds thereon. My reason for calling attention to this is : I have tried it, others have tried it, and better return has been the result. If it is a better plan, I want all to know it. I ask no patent right in agricultural improvement, I prefer to throw open all improvements.

I have, for 20 years, advised throwing two furrows as early as possible, so as to have a firm bed to plant on, because I found the cotton plant on such a bed to grow off faster and much less to die. All have noticed the plant on hard earth to withstand cold, &c., early, when in a soft bed it dies.

My plan would be, at last working run subsoil as deep in the water furrow as possible, preparatory for succeeding crop, and I think a subsoil plow or a coulter, with a small shovel or bull-tongue before it, would do well to work the young plant, the subsoil to go as deep as could be and the small shovel to throw dirt, not running so close as to break the bed under the plant. Thus giving to early roots a deep soil to run into.

As to having the furrow underneath not broken, I repeat, I have tried it and so have several others, and with marked success. Yours, &c.,

M. W. PHILLIPS.

Edwards, Miss., 1856.

THE JAPAN PEA.

We think this Pea has been much underrated, especially at the North, where the season is too short to grow it in perfection. Here it grows luxuriantly and matures perfectly, yielding an extraordinary return, when properly cultivated. They should not be gathered until the pods begin to

shrivel, when they may be carted to the barn or other out house, and threshed with the flail. They are very excellent for the table even when a year old, if prepared as follows :—Soak in water over night, and boil next day three or four hours ; serve up with butter, or place them in the oven, with a few slices of bacon, until slightly browned, like baked beans.

We are under obligations to the Commissioner of Patents and to R. Peters, Esq., for a supply of seed, but have none left for distribution.

Southern Cultivator.

From the American Agriculturist.

NOVEL METHOD FOR CLEARING A HOUSE OF RATS.

A chemical friend of ours has recently detailed to us the following account of a novel, amusing, and at the same time effectual, plan adopted by him for freeing his house from these most unwelcome visitors—the rats. The house he occupied in Boston was one of a block, and when first tenanted was comparatively free from the intruders in question. After a time, however, for some unknown reason, they appeared at once in great numbers. They occupied every room and closet, marauded in the cellar, galloped in the garret, and danced jigs nightly over every sleeping apartment, *a la ten pins*. Every expedient thought of was adopted for lessening their numbers, but without effect. Traps availed nothing—the rats were old and wise—poison had no temptations, cats were defied. At last our friend bethought himself of summoning the powers of chemistry to his aid, which he did as follows : Raising a small board in the garret floor, he opened a communication between the floor and ceiling beneath, which interior communicated with the spaces between the side walls and the laths and plaster over the whole house. In this opening he placed a dish containing finely pulverized black oxide of manganese, and poured over it a suitable quantity of strong hydrochloric (muriatic) acid. The floor-board was then replaced. The effect of the chemical mixture of black oxide of manganese and hydrochloric acid is to disengage slowly in the cold that most powerful, deodorizing, fumigating gas, *chlorine*. In common with all gases, it gradually diffuses itself through the air, but having a greater weight than atmospheric air, it accumulates at the lowest levels. The tendency of the gas liberated, therefore, was to penetrate every vacant space between the walls and ceilings, and at last found exit in the cellar.

It may be here stated that the quantity of gas so liberated can exert no injurious effect upon the house or its inmates—indeed the result is rather beneficial than otherwise upon the general health. In the case in question, the odor was not noticed to any extent in the body of the house, but after a while was very perceptible in the cellars. In a concentrated condition, chlorine, it is well known, is most offensive, irrespirable and destructive of animal life. It, at the same time, neutralizes and destroys all other odors and infectious matters.

To return, however, to the rats. The chemical arrangement described had not been long in operation, when it became evident that something unusual was occurring in ratdom. Meetings were apparently being held in hot haste, and messengers were despatched to and fro. "All night long, it would seem," says the narrator, "as if Bedlam had broken loose between the partitions of my house. The inhabitants were not only decamping, but were carrying their plunder and household goods along with them." Towards morning, however, all had become quiet—the rats had vanished, big and little, and for a period of nearly three months not one was heard or seen on the premises. Now they are gradually returning, but as soon as they become troublesome, another invitation to leave will be extended.

[The above from the Farm Journal, may be a pretty effectual method in some cases, but not a very safe one. Chlorine is a suffocating and deadly gas, if breathed in too large quantities. We should be very loth to go to sleep with the gas escaping anywhere about the house. The same result would be produced by placing considerable quantities of the common cheap chloride of calcium (chloride of lime) in open dishes just as is practiced in cleansing sick rooms. Burning sulphur, and even charecoal will have a similar effect. If these gases are used, let the dwelling be vacated by all human beings during the operation. If there are colored articles of clothing in the house not perfectly dry, they will be pretty effectually bleached if allowed to remain in an atmosphere of chlorine or sulphurous acid gas.—Ed.]

MOWING MACHINES.—The Massachusetts Agricultural Society offers a premium of \$1000 for the best mowing machine. To entitle any one to compete for this premium, he must enter the mowing machine with full particulars of its principles of construction, weight and selling price, with Thos. Motley, Jr., Jamaica, Plain P. O., Massachusetts, on or before the 1st day of June, 1856.

CURB OR CHECK REIN ON HORSES.

THE Editor of the Ohio Cultivator (says the Veterinary Journal) is a close observer of horse tactics, and claims to be something of a horse himself; consequently is able to speak (perhaps from experience) of the absurdities and cruelties practiced on colts, their dams and sires. The following remarks show that his heart or sympathies lean in the right direction, and we recommend the following article to our readers:

"We have a serious intention of erecting ourselves into a permanent institution for the relief of distressed animals. In a late number we glanced briefly at the unhorsemanlike practice of sitting upon horseback while the horse was at rest. We come now to a more prevalent evil practice, in the abuse of the curb and check rein. In the Cultivator for 1854, p. 291, is an article on this subject from an English paper, which ought to be repeated, or something like it every year.

"As we go upon our daily beat from the cottage on 3d street, to the Cultivator office, our sense of *horsemanship* is almost daily outraged by what we see at the rails and posts along the curb stone.—Country people come in with their generally well kept horses, and hitch them up while they do their shopping or other errands, which sometimes takes half a day or more. Now, these people have not the slightest intention to abuse their horses; on the contrary, many of them would fight for their steeds as soon as they would for their wives or children; but this is the way they do it: Most of those who come on horseback ride a Spanish saddle with high pommel, and with a short bridle rein. They dismount, and to keep the bridle rein from getting over the horse's head, they hitch it back over the pommel, by which it is drawn tight, and the horse's head slightly curbed. If the horse was in motion, this slight curb would cause very little uneasiness, but while all the muscles are at rest, this tension soon becomes exceedingly painful, especially as many of these country horses are not at any other time subjected to the curb. The horse bears it very well for a little while, but soon begins to step out and champ the bit, and if it had the gift once vouchsafed to Balaam's ass, would reprove its owner with all the modern improvements of the language. But as the poor brute has no such faculty, and as the rider is the ass in this case, it must grin and bear it; unless, indeed, the Editor of the Cultivator happens along, and quietly putting a finger under the rein fillips it off the horn, and goes on as innocently as if nothing had happened, while the relieved animal holds out his

grateful nose and says, "thank you, old fellow!" in a kind of horse latin, that is perfectly intelligible to the editor aforesaid.

"One day last fall we were sitting in the store door of our friend Nelson, of Urbana; it was the day of the County Fair, and as Nelson's store is right forneust the public square, the rural equestrians came in and soon filled the rails with their saddle nags. The riders as usual hitched up the bridle rein over the horn of the saddle, and went to see the sights. We noticed one colt, a spirited iron gray, trussed up in this way, which soon began to show signs of intense torture. Our finger began to itch to get hold of that curb; the colt riled at the rail, and we hitched about as uneasily in our seat, and finally as we were about going to the rescue, after saying to Nelson that a man deserved to be ——— who would truss up a horse in that way, the gray luckily slipped the rein off the pommel, and out went his nose, the gladdest colt on the public square; and we were about to take off our hat and give three cheers, when we bethought it might compromise the dignity of the Cultivator, so we only clapped our hands, and gave three cheers inwardly.

"But this is only one phase in the abuse of the check rein. Farmers are not the only sinners in this respect, in fact, they are least guilty, and it is because their horses are so seldom subjected to check, that they suffer most intensely when it is imposed. Our town and city folks have most to answer for. Here we see even the cart-boys, with a tun of sand in their cart, and the poor horse—which is generally a east-off omnibus or livery horse—checked up most unmercifully, because the ragged driver takes as much pride in having his team look well, as his more aristocratic predecessors; and at every jar of the cart, or misstep of the poor damaged brute that hauls it, the latter gets the full benefit of the jolt upon his jaws, which are by this time providentially pretty well hardened.

"The evil begins much farther back. The colt in the barn yard, that has never known restraint until now he is some three years old, is roughly caught, and a bit forced in his mouth, a erupper put over his tail, and a belt around his body, and then his nose drawn in half way to his breast, when he is left to suffer and sulk, sometimes for half a day. When this editor was a lad, he was guilty of just such enormities, but these are among the original sins of which he has most heartily repented. In breaking a colt to bit, the rein should never be drawn so as to cause positive pain in the

muscles of the neck; for besides the inhumanity and uselessness of such a course, the horse's mouth is irretrievably damaged by it for all future use; a good mouth is indispensable for a good saddle horse.

"When the horse goes into harness, again comes the abominable curb, to make him hold up his head. As before remarked, in a little horse, with all his muscles in action, a moderate curb is not very painful, and is often useful after long habit, in steadying his carriage; it is like every other bad habit in this respect. But to hitch up the team to a post, leaving the curbs tightly drawn, is an unmitigated abuse. Every day we see fine carriage teams standing in that way, left by the hour. The noble beast first puts out his fore feet, then gathlers again, turns his neck quite to one side, then to the other side, to relieve the aching muscles, and all because the thoughtless driver had neglected to take the check reins out of the hooks, or for fear his team would get their heads down.— On Sundays our devotions are often very much disturbed by such sights. Fine carriage teams are trussed up for two hours at the church doors, sometimes hot and in fly time; they can only twitch their skin and wag a stump of a tail: sometimes in winter, with the keen wind singing in their ears, and their forefeet in the frozen slush of the gutter. In such cases, if it were not Sunday, and if it were not for disturbing better worshippers, we would like to throw a torpedo into the pew of the owner, who ought to be made to sit astride of a sharp rail without any cushion on it, all the time his team was hitched up that way."

WATERMELONS.—A subscriber who fails constantly to raise this delightful fruit, wants advice. Let him plant upon light sandy soil. We believe this is essential. If he has none such, he must dig out for his hills, holes of two and a half feet square, and fill with earth procured elsewhere.— A large supply—say half a bushel of thoroughly rotted compost should be put to each hill and well incorporated with the earth. The hills should be from eight to ten feet apart. With such preparation, careful after culture will secure a good crop, if the season be favorable.

WASH FOR BARNS.—The Horticulturist gives the following as the best for this purpose:—Hydraulic cement, one peck; freshly slacked lime, one peck; yellow ochre (in powder) four pounds; burnt umber, four pounds; the whole to be "disolved" in hot water, and applied with a brush.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., JULY, 1856.

NORTH CAROLINA COAL.

WE copy with much pleasure, and call the attention of our readers to the following article from the *Star*, pointing to one of the numerous and vast resources of the State, beginning to be developed by the wise and liberal enterprises and improvements of the day. Among the outlets to these mines, we hope to see speedily erected a railroad from this place.—Wood is becoming scarce in this vicinity, and much coal would be consumed here as ordinary fuel, if it could be procured on reasonable terms. A considerable quantity of inferior coal is already being imported from Virginia to this place; just as we go North for many of our necessary articles, which might be secured of a cheaper and better quality at home. It is high time to change this suicidal practice. The honor and interest of the State call loudly upon every citizen to give his zealous and steady support to this policy; and no patriotic son of North Carolina can turn a deaf ear to the call. Union, concert, and perseverance in this good work, will make our State great, as she is, and ever has been good and glorious. We speak of these things the more cheerfully, because they all have a tendency to “speed the plow.” The *Star* says:—

We availed ourselves, on Saturday, of a polite invitation from Mr. Burns, to examine specimens of coal from the Deep River Mines which he is daily using. The coal is a fine bright bituminous coal, free from all impurities, burns well, and leaves very little ash. One of the hands at the forge told us that two bushels of the Deep River Coal, were worth as much as three of the Virginia Coal. We understand that one of the companies on Deep River have expended \$270,000 in opening their mine, and that they are now prepared to raise a ton a minute, and furnish it at nearly half the price of Northern Coal. Indeed, Mr. Burns is so well convinced of the superiority, cheapness and excellence of the Chatham coal, that he is using it exclusively, hauling it from the mines 40 miles distant in wagons. All these mines need is an outlet. They can supply enough to keep the road from Fayetteville, the navigation company on the Cape Fear and Deep River, and a road from the mines to this place, busy all the time. Indeed we learn that the Superintendent of one of the mines says that he is prepared to load five hundred coal cars daily. Ought not every facility to be extended to these mines for getting off their coal in all directions.

IMPORTANT TO TURPENTINE DISTILLERS.

THOUGH not intended for the public eye, we take the liberty of publishing, as we took the highest pleasure in reading, the following letter from our old and much esteemed friend, KEMP P. HILL, Esq., formerly of Franklin County, in this State; and will here answer his inquiries, that others, who may desire it, may have the benefit of the information.—We also call the attention of the Turpentine distillers of our State to the important discovery of Mr. Hill, in preparing barrels, to hold the spirits, of the pine wood. It is certainly an important and valuable discovery; and we are glad he intends to exhibit a barrel of the same at our next State Fair, as it cannot fail to attract great interest and attention.—The fee of membership to the State Agricultural Society is three dollars, and those who exhibit articles at the Fair are required to become members. The world will soon learn that North Carolina has other staples besides “Tar, Pitch and Turpentine.”

Near Cheraw, S. C., June 9th, 1856.

MR. T. J. LEMAY—*My Dear Sir:*—Enclosed I send you one dollar for the *Arator*. I do not recollect whether I paid you for last year: You know all about that. You remember you promised me there should be something said in the *Arator* about Naval Stores—Tar, Pitch, and Turpentine—“the staple commodity of the old North State;” but I have looked in vain in every number I have received: though I have failed to receive some of the numbers.

What does it cost a man to become a member of the State Agricultural Society? Is it necessary for every man who exhibits an article at the State Fair to become a member of the Society? My object in making these inquiries at this time is, that I purpose at the next State Fair to exhibit a barrel of Spirits of Turpentine made of the pine wood, to satisfy every one who feels an interest in the matter, that Pine Spirit Barrels can be made to hold the Spirits of Turpentine just as well as the Oak; and if so, it will be an actual saving of thousands of dollars to the distilleries of North Carolina annually. I have tried it, and sold a number in New York and Wilmington last fall and winter and during this spring, at the best market prices.

What do you think of it? With my best wishes for your success spiritually and temporally, I am yours respectfully,
K. P. HILL.

DESTRUCTIVE HAIL, &c.—We understand there was a very destructive hail storm about 18 miles east of this City, on the 11th of June, which, in 7 minutes covered the ground 8 inches deep, and for several miles around completely destroyed the wheat and beat the young corn to the earth. There was also a hail storm, on the same day, 5 miles south east, which was accompanied with severe wind, injuring both the wheat and corn.

QUESTIONS ANSWERED.

PARLOR PLANTS.

Q. A lady correspondent asks, why her parlor window plants become weak, pale and sickly?

A. Because the fashion of keeping the blinds closed excludes the light and air. Plants will not thrive in a dark place. They need light, as well as heat, air and moisture. If the window is in a suitable place to receive the sun, and the plants are potted in suitable earth, and kept reasonably moist, they will flourish nearly as well in a parlor window as in a green house.

MOLASSES IN COOKING.

Q. Another inquires how the peculiar molasses flavor may be taken out in cooking "with that article?"

A. We have seen it stated, and doubt not the fact, that when molasses is used in cooking, it is a very great improvement to boil and skim it before using. It takes out the raw or "peculiar" taste, and makes it almost as good as sugar.

TO MAKE MILK FLOW.

Q. "My milker complains that the cow will not give down her milk. Can you tell us how to remedy the evil?"

A. There are two ways: 1st. Feed liberally and regularly with slops and hay. 2. If that should fail, in addition to regular feeds, feed at the time of milking. This will make the most stringent cow give down her milk, cheerfully, and richly repay the trouble and expense. Try it.

OSAGE ORANGE.

Q. "Will the Osage Orange make a sufficient and permanent live fence in our climate? G. B., *Granville County.*"

A. From what we have seen and heard, we hesitate not to respond in the affirmative. The Osage Orange is indigenous to the South. It grows spontaneously in Texas, and we saw some hedges of it in that State, that had been badly managed, but showing that the tree will make a splendid hedge.—It has been tested five years as far North as New Hampshire, and found to stand the winters there, and will of course stand it all South of that latitude.—In four years it will be at least four feet high, stout and bushy, forming a strong fence. It may be raised to that state at a cost of only 20 cents per rod, or for every 16½ feet, and is certainly a very cheap, as well as beautiful fence. Where timber is scarce, let it be tried.

HOW TO PREVENT MOLES FROM EATING CORN.

Q. "Sir: I owe you an apology for not sooner remitting my subscription to the "Arator;" but "it is never too late to do good." Your Journal deserves a liberal patronage, and all North Carolinians should aid in sustaining it. Were it to fail, there would be another evidence that we deserve the appellation of Rip-Van-Winkle.

"Can you or some of your readers tell me what will prevent moles from eating corn in the hill?—There is a general complaint in this section of their depredations on corn and vegetables, and the *re-planting* has been quite a serious job. Yours, &c.

JAMES C. NORMAN.

Mount Airy.

A. It is said the moles leave gardens where the Palma Christi, or Castor Oil bean is grown. Perhaps they are killed by eating the seed, or they scamper from the odor of the plant as rats do from that of chlorine or chloride of lime. They may be caught by traps set in their newly plowed tracks;—the trap is no more than a half cylinder of wood made hollow, each end of which should be furnished with a ring containing a noose, or loop, of horse hair; these are loosely fastened in the centre by means of a moveable peg, and the hair stretches above the ground by a bent stick capable of springing up. As the mole passes, he forces the central peg away when half through the trap, and the spring above, acting on the hair, draws it tightly and strangles the animal." And we doubt not corn soaked in strychnine and placed in their tracks, would do the work for them. We hope some of our readers, who have knowledge on the subject, will impart it to us for the public benefit.

WISE DISCUSSION.

Q. "Mr. Arator: Will you explain why cows eat more than horses? Neighbor H. and myself have been debating this question, and concluded to leave it to you. Yours, &c.

A. S."

A. We know not, unless it be, that the cow, like the "AS" has *less brains* and *more stomach* than the horse. "Answer a fool according to his folly, lest he be wise in his own conceit."

MAKE THE BEST OF YOUR LOT.

Q. "What shall a poor fellow do, who has worn out land, and nobody to help him improve it? How can he compete for prizes, or hope to keep pace with his more favored neighbors? Had I not as well be idle as to waste my labor? Yours,

HOPELESS.

A. No, sir-ee; he that would not exert himself to improve his condition because less favored with land and help than others, would act much what as wisely as the man who would not use his legs to walk, because he had no wings to fly. Be diligent and industrious. Manure, manure, work deep, work deep your land. Improve, and you will be rewarded with the highest premium—the greatest honor, plenty and contentment. Remember, none but the slothful, saith there is a lion in the way—none but the sluggard crieth for a little more sleep, a little more slumber, a little more folding of the hands to sleep!

GARDENING FOR THE SOUTH; OR THE KITCHEN AND Fruit Garden, with the best Methods for their Cultivation. By WILLIAM N. WHITE, of Athens, Georgia. Published in New York, by C. M. Saxton & Co

We are indebted to the Publishers, through the politeness of Mr. Pomeroy, for a copy of this new work. From the cursory examination which we have given it, we feel safe in recommending it to the public as a very valuable accession to our Southern Agricultural and Horticultural literature; and we see by the complimentary notices of much better judges, that it stands number one, in their estimation, among similar works. It has the merit of being adapted to our section of the country—an important consideration—and cannot fail to be of incalculable value to every cultivator of the soil. Every house-keeper should have a copy, and study it. For sale by Mr. POMEROY, Book-seller of this City. Price only \$1.25, for a neatly bound book of 400 pages.

STATE SHOWS, 1856.

American Pomological Society, at Rochester,	Sept. 24
Canada East, at Three Rivers,	Sept. 16, 17, 18
Canada West, at Kingston,	Sept. 23, 24, 25, 26
Georgia, at Atlanta,	Oct. 20, 21, 22, 23
Illinois, at Alton,	Sept. 30, & Oct. 1, 2, 3
Indiana, at Indianapolis,	Oct. 20, 21, 22, 23, 24, 25
Maine,	Oct. 23, 29, 30, 31
Michigan, at Detroit,	Sept. 30, & Oct. 1, 2, 3
New Hampshire,	Oct. 8, 9, 10
New Jersey, at Newark,	Sept. 10, 11, 12
New York, at Watertown,	Sept. 30, & Oct. 1, 2, 3
North Carolina, at Raleigh,	Oct. 14, 15, 16, 17
Ohio, at Cleveland,	Sept. 23, 24, 25, 26
Pennsylvania, at Pittsburgh,	Sept. 26
South Carolina, at Columbia,	Nov. 11, 12, 13, 14
United States Agricultural Society, at Philadelphia,	Oct. 7, 8, 9, 10
Wisconsin, at Milwaukee,	Oct. 8, 9, 10

EDITOR'S VISIT TO TEXAS.

To save the trouble of writing an editorial, giving a sketch of our travels in Texas, we present to our readers the following letters written while there; in which they will find some descriptions of the country which may interest them.

Chapel Hill, Texas, April 17th, 1856.

A. T. MIAL, Esq.—*My Dear Sir:*—Since my first letter to you, I have travelled pretty extensively over Western Texas, and I confess my impressions in regard to the State have undergone a considerable change. In my route from this place to San Antonio, *via* Gonzales, and back, *via* Austin, I saw some of the most enchanting prospects, the largest bodies of fertile land, and most beautiful streams, I ever expected to behold; and met with more intelligence, refinement, and moral improvement, than any one "in the States" supposes to exist in Texas; all indicating, with unerring certainty, that the "lone Star" State is destined to become one of the brightest of the constellation to which it has been "annexed." For greatness in all the rural pursuits and arts of husbandry, it will ultimately stand unrivalled, as it possesses natural advantages, in climate, soil and health, vastly superior to those of any other Southern State. But while its advantages can scarcely be overrated, it must not be disguised that, at present, it labors under disadvantages of a forbidding and formidable character; and these are generally too little considered by those who look only on the pleasing objects of the landscape, losing sight of the frightful ravines and deceptive bogs engulfed in the long perspective; which accounts very satisfactorily for the fact, that many who have blindly rushed into Texas, without proper consideration and suitable preparation, are now found to be—as to pecuniary embarrassments—like a strong man in a morass, sinking deeper and deeper every struggle they make.

I shall now proceed to give you some account of my travels and observations; from which you may gather some idea of the country and its condition—leaving you to work out your own opinion of its prospects.

This place, where I have spent most of my time, is a very pleasant village, containing some three or four hundred souls within the corporation, with a thickly settled population for several miles round its vicinity. The people here are equal in moral, intellectual and pecuniary worth to the same number in any of the older States, and saving some of the stiffer punctilious of etiquette, which "are more honored in the breach than the observance," are as much at home in the practice and enjoyment of the refinements of society, as any who boast of their hoary institutions and time honored customs. The location is in a rolling prairie, diversified with streams

and skirts of timber—adorned with cultivated fields and neatly painted residences, which may be seen from some eminence thickly dotting the country for miles in every direction—

"While the landscape round it measures
"Russet lawns and fallows gray,
"Where the pibbling flocks do stray."

The lands produce a bale of cotton and 40 to 50 bushels of corn to the acre. It is quite healthy in this section—sickness being rare, and generally of a mild and manageable character.

On the 3rd of March, we left Chapel Hill for Caldwell, in Burleson county, travelling to Independence a distance of 16 miles, where we spent the night.—The hog-wallow and rolling prairie continues three or four miles from Chapel Hill to New Year's Creek; after crossing which we entered the post-oak land, of good quality—light, sandy soil, timber pretty thick, interspersed with hickory, black-jack, dog-wood, and more undergrowth than usual, a distance of four or five miles—then rolling prairie the balance of the way to Independence; in which we saw but few cattle and two or three flocks of sheep.—As an occasional incident will serve to illustrate better than description, it may be here stated that in passing a Dutch settlement, when we were emerging from the "timber" into the "prairie," we called at a house near the road and asked for water, which was readily handed to us by a flaxen headed boy, 13 or 14 years of age, in a large *brass stew-pan*!

Independence is a small village, in Washington county, on a high hill in the prairie, five miles from the Brazos and three from the Yagua (Yawan) river, containing about 300 inhabitants, with a male and female college, of high character, under the auspices of the Baptist denomination, numbering, at the opening of the session, 119 male and 85 female students. The male college edifice is of stone, two stories high, 35 feet by 55 feet; and the female, now being erected of stone, is 45 by 75 feet, to be three stories high. The present school-building for this department is an old two story wooden house. The two departments are half a mile apart, on opposite sides of the town. The Baptist Church in Texas deserves high praise for this noble fruit of its enlightened enterprise and liberality. We saw numbers of girls residing in the vicinity, riding in to school, on their mustang ponies, as blithesome and happy as larks. The Rev. Mr. Barleson is President of the Institution. The town has some old looking, dilapidated buildings, a few new and neat cottage-like houses, and others being erected. It has a newly built church, in a very convenient place, surrounded by a thick grove of live oaks, grouped with fine effect, and presenting a striking air of the com-

fortable and agreeable, a little mixed with the romantic. The country here is rocky—the first I had seen in Texas; and it is represented to be very healthy, but the water is bad, being rotten lime-stone. The place has two Hotels, the "Independence House" and the "Holmes Hotel." We lodged in the latter, and found "mine host" a very clever fellow—an old Kentuckian—and his accommodations good; but his house, like many in this State, is ceiled with domestic cloth. Here we met a Mr. Fauquier, a native of Person county, N. C., who has prospered here, and enjoyed fine health, for 15 or 20 years. One of his neighbors, he informed me, had made \$30,000 farming on prairie land, in the last ten years. Last year, he raised 215 bales of cotton with 20 hands, plenty of corn, and nearly all his pork. Prairie lands, in this vicinity, are offered at \$4 per acre;—but for these lands, fencing and fire wood must be hauled a considerable distance. The hauling is done chiefly with oxen—four to six yokes to a team. They are generally of the old Spanish breed, and very large. I saw at Holmes's a yoke of mammoth size. They are full sixteen hands high, and large in proportions—looking like elephants—horns (a characteristic of these cattle) long and wide, being at least four and a half feet from tip to tip. The owner would not take two hundred dollars for them.

This (Washington) is a large, old settled, populous and wealthy county. It has two other towns, Washington, on the Brazos, a very fashionable place; and BRENHAM, the county seat, located in a beautiful and healthy portion of the county, surrounded by prairie and post-oak land. In going to this place from Chapel Hill, only nine miles, we travelled what is called "the sea route"—a splendid rolling prairie nearly all the way—from which a number of the residences, surrounded by little groves or "mounds" of timber, are seen in the distance; and crossed by small creeks, slightly skirted with woods, being the timber seen on the way. While there, I attended the sitting of the Circuit Court. The Judge, (Baylor), a man about sixty years of age, appeared to be one of mediocrity, gentle and good natured.—The proceedings were conducted quietly, there being nothing exciting before the Court. The people looked about like such as we usually see at Court in Johnson county. Lands in that vicinity may be bought—unimproved, for \$6, and improved, for \$10 per acre.

As the mail will soon close, I must defer further narrative until my next. The weather has been dry and warm here ever since about the middle of March. Those who planted early, have good stands of cotton and corn, which are doing well; but much cotton and corn seeded late, have not, and cannot come up, until it rains. Planters caught in this predicament are, as usual, croaking about it: though they

say they are confident of a good crop, if it gets up by the first of June. The country generally is healthy; and notwithstanding the sun is as hot as in June with us, the weather, on account of the cool and balmy winds which prevail, is delightful. Tho' much later than usual, we have been eating vegetables—lettuce, raddishes, &c.—three or four weeks, and garden peas are ready for the table.

Respectfully yours, &c.,

THOS. J. LEMAY.

Chapel Hill, Texas, April 22, 1856.

A. T. MIAL, Esq.—*My Dear Sir*:—I have been in thirteen counties in Texas, to-wit: Harris, Austin, Washington, Burleson, Fayette, Gonzales, Guadalupe, Medina, Comal, Hays, Caldwell, Travis and Bastrop. My last closed with a brief sketch of Washington county. From Independence we proceeded to Caldwell, the county seat of Burleson, distant 30 miles. We crossed the Yagua three miles from Independence; the bottom of which, about a mile before reaching the river, is thickly timbered with small elms, soil black and sticky, and was then so boggy, the country having recently been flooded with rains, the road was impassable, and we were compelled to take trails through the woods. The ferryman, (4th of March) was barefooted and looking as if bloated with liquor or malaria; but he soon set us across the little nasty, muddy stream, when we had to splash through another but prairie and less miry, bottom, three-quarters of a mile, before we reached the post-oak ridge, commencing after ascending a bluff, and continuing, with alternate openings of prairie, all the way to Caldwell. We saw but few houses, (and they miserable huts) on the route—the land being estimated of little value except for grazing purposes—though I suppose there is scarcely an acre of it that would not produce at least fifteen bushels of corn, and some fifty. We saw some deer, though game and stock were scarce, being still confined, as the grass on the high lands was a downward, to the bottoms.

As we were "green from the States," we found some difficulty in navigating to Caldwell, and when the shades of night came on, began to think ourselves in a serious "snap." The fact of the business is, in these wide spread prairies and "wild land," the "shoots" or forks in the roads are often bewildering to strangers, and they seldom meet any but travellers, who are as ignorant of the "directions" as themselves. Thus we found ourselves when in three miles of the town, and the curtains of night closing in around us on all sides: the roads forked, and shot off in almost opposite directions; we had been told to keep the "straight forward road;" neither had that appearance, and we had to go one of

them "at a venture." We took the left—generally a bad deviation—and after travelling two and a half miles, through an open prairie, we found it so in that instance; for we came to a boggy creek, through which we found it impossible to force our horses—mine a wild and fiery black Arabian, and that of my companion a "pitching" (as he strongly suspected) mustang pony. What was to be done? No house or sign of human habitation appeared, and we began to think seriously the fates had decreed we should "stake out" for the night. We determined, however, to try the other end of the road first; went back, took it, and triumphantly entered the village at about 9 o'clock—finding, in the sequel, that when at the ford where we turned back, we were within a quarter of a mile of the town; but it was well we did not push through, as it was a dangerous "crossing." The tavern, kept by Capt. Snell, is an old shell of a wooden building; and all the houses in and about the place, except the Court-house, of brick, are small framed and log huts. It has six or seven stores, and a population of 150 or 200 souls. The place has a bad moral character, but all was quiet, orderly and civil while we were there.

We spent several days with Mr. J. Eccles, an old and respectable planter, who lives seven miles from Caldwell, "in the post-oaks." He has a splendid farm, as you know, adjoining your land, in the Brazos bottom, where he plants, raises horses, cattle and hogs, making money on stock as well as cotton. He says he takes four fellows and two women to attend to his stock, and still makes more cotton than he can gather. He never met with any serious disaster on his farm, (and he has been here upwards of twenty years,) until last year, when his cotton rotted, in consequence of excessive rains, and he did not gather more than one-fourth of a crop. His family enjoys good health, and he has had good luck in raising his young negroes—keeping his women with young children at his residence in the post-oaks, and bringing up there any that are taken sick, where they soon recover with but little medicine. All his houses are log, but comfortable, except at his plantation, where they are too small and some of them with dirt floors. Cotton is hauled from that section to Houston, a distance of 95 miles, chiefly by oxen, at 75 cents to a dollar per hundred. Sometimes it is boated off, but the river is never navigable for even flat boats, except it has a considerable swell.

I was struck with the enormous growth of the cotton on Mr. E's. plantation. The rows were planted 9 to 11 feet apart, the stalks are left about three feet apart in the row, and frequently grow as large as a man's wrist at the ground, branching so as to fill up all the space, and towering above a man's head on horseback—producing sometimes two bales

to the acre. Mr. E. averages, from year to year, eight bales to the hand; also making his own pork and corn.

We rode over a large portion of your tract, which lies beautifully, and cannot be beaten for quality and location by any on the Brazos, that I saw; and, what greatly adds to its value, it is entirely above overflow. When the railroad now being built from Houston, 11 miles of which is completed, shall be finished to some point convenient to that section, the lands there will be worth 25 to \$50 per acre.

The Brazos bottom here, differs a little from that lower down, in being drier, more elevated, lighter soil, and the timber not so heavily draped with moss. The large growth is principally hackberry, elm, pecan, sycamore and cotton wood, and some trees are enormously large. We saw some cattle in the bottom that had never been fed, fat enough to make good beef; and Mr. E. told us that he had hundreds of mares and colts there, that were raised, keeping fat, without any feeding. The Pecan resembles a large hickory tree, nuts oblong, smooth and thin shell, and bears every other year. It is so abundant that a hand can gather five or six bushels a day, which, being an article of trade, is turned into profit, selling at 2 to \$3 a bushel. The people are in the habit of camping on your land, and taking the liberty of gathering pecans every mast year. The Brazos and its bayous abound in cat and buffalo fish—the former often attaining the enormous weight of 50 to 60 lbs.; also, in alligators, which have been sometimes known to crawl out into the contiguous fields. The Turks head cactus grows spontaneously in "Mound Prairie," Burleson county, where we gathered some specimens.

At Mr. E's. I found some specimens of petrified timber, and learn there is a petrified stump in the neighborhood. I was also, informed that in an upper county, a petrified rattle-snake was found in a cave. It was in its coil, perfect in all its parts, even the brilliancy of its eyes, and as large as a common sized man's leg!

Burleson county has a great deal of post-oak high-land, which gives it the reputation of a poor country. But it is a fine place for raising stock of every description.

Mr. Eccles lives about a quarter of a mile from Providence, a Baptist Church, with which is connected a public grave yard. Several graves, we noticed, were neatly enclosed with brick, and others had marble slabs at their heads; among which is one dedicated to "Gilbert Longstreet, of Augusta, Ga., who died in 1851, aged 68 years." In the grave-yard at Independence, we saw the resting place of some early emigrants from North Carolina. In a neat little enclosure, are several graves; one of which

is marked with a large head-stone, dedicated to Judge John P. Coles, who died in 1847, was born in Rowan county, N. C., 1773, and emigrated to Texas in 1822. By his side lie several of his children.—His widow still survives, and resides in Independence.

On our way from Mr. Eccles' residence to his plantation, I had a real John Gilpin race to myself. It commenced raining, and having a piece of oil-cloth along, I threw it over my shoulders, which frightened my Flying Childers, and she darted off like lightning, running at full speed about a mile down the road, before I could stop her, leaving my two grave companions, my cloak and hat, (and if I had worn a wig, that would have gone too *ala Gilpin's*) all behind. Nobody, however, was hurt; but I tell you it was a swift *solus* race, and went sorely "agin the grain." Another little adventure, in recrossing the Yagua, afforded us some amusement, and relieved the *tedium* of our journey. The river was getting out of its banks, and the sleu, 50 yards the other side, was supposed to be swimming. We called up the ferryman, a strapping negro fellow this time, who promptly came to our assistance. "Come over Cuffee, in your *dug-out* (a small log trough that would barely carry two men) and swim our horses across the sleu." "No danger, gentlemen, in riding across;—slue no swim you—and dis dug-out turn ober in a minit." If there was any bogging and swimming to be done, we preferred getting Cuffee into it, and therefore prevailed on him to paddle across the turbid and treacherous looking water, which he did, feeling along with his ear for the bottom, to sound its depth. Having landed his small craft, he mounted the mustang of my companion, who took the canoe; it having been agreed, as mine was the tallest horse, I should follow Cuffee *a cheval*, swim or no swim. Here was indeed a laughable scene. Cuffee, not more graceful looking than Ichabod Crane on ewe necked and hammer-headed o'd Cun Powder, kicked his pony to the edge of the water; but pony had seen boggy streams before, and refused to go.—Cuffee slashed and kicked and kicked and slashed again; when suddenly pony reared up, fell upon his haunches, and wheeled right about, his ebony rider sliding off into the mud as quick as thought; but after a second sounding of the water, he came back and remounted, when I, having brought my courage up to the sticking point, led the way, which encouraged the pony to enter, and he plunged in and we went through in gallant style. My companion crossed the sleu in the canoe. A thick set, muscular outlandish man, to whom nature had made up in hair what she denied in brains, aided by Cuffee, soon put us across the river, in a flat propelled by a rope stretched across the stream, and we wound our way

through a newly blazed bridle path in the bottom, to Independence, *en route* back to Chapel Hill. I reserve an account of our farther adventures until my next.

It is gratifying to see that Texas is going ahead in the work of Internal Improvement. She has four railroads already in progress. 1st. The *Harrisburg Road*, in operation, 25 miles from Harrisburg to Richmond. 2d. The *Tup Road* from Houston, 6 miles length, to connect with the Harrisburg road eight or nine miles from the latter place—to be ready for running by the 1st of July. 3rd. The *Houston Road*, commencing at Houston, to run West via Washington—11 miles completed and in operation. The 1st section of 25 miles to Cypress, where a town is laid off, is to be completed by the 1st of July; and the next section, of 25 miles more, to some point on the Brazos, near Chapel Hill, under contract by Judge Stamps & Co. Sledge, will be graded by the fall.—4th. The *Galveston and Henderson Road* is progressing under the new contractor, Mr. Smith. The grading is completed to Clear Creek, and all the streams bridged to that point. Twenty-five miles will be completed by the 30th of July. This road is intended to connect Galveston with Shreveport.

After a long warm spell, we had a change of weather on Saturday night last, and it was almost cold enough for frost here on Sunday morning; no rain since 16th of March, except a light shower this morning. Everything is suffering for rain. Late green peas on Sunday, and saw ripe mulberries on the *Multicaulis* trees. More anon. Very truly yours,

THOS. J. LEMAY.

PRESERVATION OF TIMBER.

The invention or discovery of some means of preserving timber from decay, is certainly a *desideratum* of great importance. The rotting of timber imposes a heavy tax upon every wooden structure—especially works of public improvement. The following, taken from that valuable journal, the *Scientific American*, describes some of the processes which have been tried to preserve timber:

On June 14th, 1837, A. Gottlieb, of New York, obtained a patent for protecting timber from dry rot. The tar of gas works and pitch, in equal quantities, were placed in metal troughs, and heated up to 400° Fah., and the timber was immersed in this until all its pores were filled. A quantity of salt was also added to the mixture. It is our opinion that this is a very good method of treating timber to be laid on the ground; but for spiles to be used for docks, subject to the attacks of the sea worm, some corrosive sublimate should be added to the tar.

It is rather remarkable that a patent was granted to the same gentleman for the same invention on the 21st of September following the above, as the attorney for J. Knowles and Robert Gilbert, of England.

On April 12th 1853, C. Morgan, of Louisiana, ob-

tained a patent for preserving wood by saturating it with lime. The timber to be treated was steeped in tanks of lime water for some months, until all its pores were filled with a carbonate of lime. The liquor was renewed in strength from time to time, by adding fresh lime.

On January 16th, 1834, F. Kenshaw, of Brookville, Mass., secured a patent for preserving shingles from decay, by dipping them in scalding hot turpentine and tar, then sifting hot sand upon them.

A wash of lime, wood ashes, salt, and molasses, applied to shingle roofs, in three successive coats, is said to preserve them better than oil paint.

On June 6th, 1843, Peter Van Schmidt, of Washington, D. C., was granted a patent for charring the surface of timber impregnated with any salt, by immersing the wood in hot oil. The impregnating of the timber with a salt, such as corrosive sublimate, or any other preservative, was done in the same vessel in which the timber was charred by the hot oil. It is well known that timber slightly charred will endure for a long time when set in the ground, hence it has been a common practice in some places to char the feet of fence posts.—Whale oil burns at 630° Fah.—a heat sufficient to char wood.

It appears to us that some good and cheap process for impregnating timber with certain preservative salts ought to be successful, and come into very general use. Yet although so many patents have been taken out, and although many establishments have been erected for preserving timber, no process has come into general use among us. A factory established to preserve timber, at Williamsburg, N. Y., some years since, was soon given up; and another erected at Rochester, N. Y., was burned down about three years ago, since which we have not heard any more regarding it.

HOW TO MEND BROKEN CHINA.

The following has been tried, and is believed to be an excellent method: Take a very thick solution of Gum Arabic in water, and stir into it Plaster of Paris until the mixture becomes a viscous paste;—then stick the parts together with this cement, and in three or four days, it will adhere as firmly as if the article had never been broken.

CATTLE and horses are said to be dying by hundreds on the American bottom in Illinois, either from some virulent disease which has become epidemic, or from some poisonous herbs growing there. The symptoms in all cases have been similar.

The Greeks are cultivating land to a great extent in and about Jerusalem, planting olive and mulberry trees, and building silk mills.

Mr. Willis, of Orange, Mass., has sold the right of his "Improved Stump Extractor," for the States of Wisconsin and Iowa, to a gentleman in Milwaukee, for \$8000.

From the New England Farmer.
CARE OF COLTS.

MR. EDITOR:—Knowing the inattention usually shown to questions asked through the public prints, I take the liberty of being one (perhaps of the five hundred) to give answers from practical experience, to the questions asked in your February number of the *Monthly Farmer* in regard to raising Colts; and will here say that it is much the custom of breeders generally to care very little for colts, and until of late years there was no stock raised, to which so little care was given. I will make answer in the same order as the questions were published in the February number.

1. Keep colts in good order, not too fat, with a variety or change of food. Oats, cut feed or roots, and two or three quarts of grain, not more, per day.

2. Wean colts before taking up for winter, if strong and lively; if not, afterwards, but according to the time of being foaled.

3. The colt should be weaned according to the strength of it and its dam; but generally at about the age of six months.

4. If the colt was a late one, by all means. It would not materially injure the mare, if she could be kept in good flesh and spirits; but if a large and strong colt, it would reduce the strength of the mare. It is not advisable to let a colt draw on the mare longer than can be helped.

I will here remark that there is no particular need of cleaning or rubbing, but feed and water regularly, and keep them warm in winter, and by this, and kind treatment push them forward for the first two years. But above all things to begin with,—breed from the best blood to be had, as they are more profitable, and the expense is just as much to raise a good one that will bring \$150 at a year old, perhaps \$3000, as one that never will bring much.

If these answers meet your ideas, use them as you will; if not, why they may be sent with the rest of the rejected ones to the fire.

Respectfully, your obedient servant.

Feb., 1856.

M. A. C.

CONTAGIOUSNESS OF GLANDERS.

REGARDING the contagiousness of glanders, Mr. Percivall submits the following deductions as the result of facts gleaned from his own experience:

"1. That farcy and glanders, which constitute the same disease, are propagated through the medium of stabling, and this we believe to be the more usual way in which the disease is communicated from horse to horse.

"2. That infected stabling may harbor and retain the infection for months, or even years; and

although by thoroughly cleansing and making use of disinfecting means, the contagion might be destroyed, yet it would not be wise to occupy such stables *immediately* after such supposed or alleged disinfection.

"3. That the virus, or poison of glanders, may lie for months in a state of incubation in the horse's constitution before the disease breaks out. Of this we have had the most positive evidence.

"4. That when a stable of horses becomes contaminated, the disease often makes fearful ravages among them before it quits; and it is only after a period of several months exemption from all diseases of the kind that a clean bill of health can be rendered.

From the New England Farmer.

GRAFTING THE GRAPE.

MR. BROWN:—From reading the queries and remarks in your paper of 29th ult., I feel disposed to tender my mite of information and experience to Mr. Farrar, and all would-be-grafters of the noble grape. I have grafted the grape vine with good success, and it always pains me to see one of these native vines, after becoming well established in the soil, ruthlessly dug up as a nuisance, simply for the want of a mite of information to enable its owner to change it to any (or even all) of the different varieties to be desired. In addition to Mr. Downing's remarks, I would say, that it is better to use Babbit's grafting wax, as it facilitates the union between the stock and scion, and if put on with care (the same as in ordinary grafting) it prevents the stock from bleeding; so that one can graft them as early in the spring as the frost will permit, thereby securing a better growth and ripening of the wood, than if postponed till June. The grand secret of success is, *in keeping all sprouts from growing on the head or bulb* of the vine grafted. Generally, on a vine, where the roots and top unite, there is an enlargement, (which I call the head,) which is full of eyes, which are very ready to put forth and absorb the sap and supply the place of the old vine removed. As often as once a week I dig around the head of the vine, and remove all the sprouts, taking great care not to break the buds of the scions or disturb them in the least. I never leave but two buds on a scion, and cover them with fine earth, over which strew a little fine mulching, so that it will keep moist around the buds.

I hope Mr. F., and many others, will try the above, for I think they will be more than satisfied with the result.

READER.

Winchester, April, 1856,

WORK FOR JULY.

HARVESTING is not over. Oats and some wheat yet remain to be saved; and many meadows have not been cut. Let these all be well secured. Thresh out the wheat as early as possible, and secure it from vermin—from weevil by sunning it, and from rats by rat-proof houses or boxes and hog-heads. But remember, there is danger in putting in too large and close bulk, unless thoroughly dried. Prepare, for next wheat crop, a pea fallow or manure for a light broadcast supply to the land.

CORN that is not laid-by should be well stirred, by the sweep or cultivator, the weeds and grass kept down, and peas sowed broadcast the last working. Corn should be sown broadcast for hay, or in drills, (which should be plowed once or twice) $2\frac{1}{2}$ feet apart, sowing it very thick. Cut when in the silk, close to the ground, with a heavy knife—spread in rows, and after wilted, turn over, and late in the evening tie it in bundles about 12 inches thick, and shock in four or five bundles to the shock—standing on the but end, capping them with one bundle reversed. The shocks must be opened the next sun, and soon as dry enough, packed away.

PEAS may be sown broadcast for hay, by themselves—a bushel to the acre—plowed in, or harrowed, after plowing.

COTTON should be kept stirred and free from weeds and grass, by the free use of the sweep or cultivator. Light surface stirring well and closely done, is considered best. Diligent culture encourages heavy bearing, and prevents abortion.

SWEET POTATOES must be carefully stirred and the grass kept out until the vines take the ground. Some time this month, set out a patch of cut vines for next year's planting.

TURNIPS are not sufficiently appreciated among our farmers. They are valuable for winter forage. Therefore, prepare for a large "patch" this year. Make the ground rich with stable or cow-pen manure, mixed with ashes and rich woods mould—keep it well broke, and sow from middle of July to 1st of September—10th to 15th of August is the best time for common varieties. Ruta Baga in July. It would be wise to sow all early, in time for a second or third trial, in the event of a failure. The Ruta Baga should always be sown in drills 18 inches to $2\frac{1}{2}$ feet apart, and worked; and they will richly repay the labor. They are easily kept all the winter, and are excellent for cows or hogs.

DRAIN AND HILL-SIDE DITCH, if you have time.

MANURE PILES.—Keep them growing, by piling up weeds, grass, muck, rich earth, manure and ashes. Keep them covered with a heavy coat of leaves or straw, pressed down with a thick outside covering of earth. Keep all crops free from weeds and grass, and wherever weeds can be found, cut them up by the roots and throw them on the manure piles.

THE GARDEN should not be neglected.—Plenty of good vegetables are not only wholesome and palatable, but decidedly profitable. They save meat and bread, and afford the means of feeding milch cows and pigs abundantly. Keep down weeds, break the ground thoroughly, and provide a liberal supply of manure for fall crops. Preparations for strawberry beds may be commenced. Plow deep, turning under a heavy coat of woods mould and ashes, leaving the surface fine and mellow. Plant corn for roasting-ears. Plant snaps, mulching them heavily as soon as planted. Sow the green Glazed Cabbage. Transplant cabbages, plant Canteleups, &c.

DEEP PLOWING.

We concur with our correspondent "H." on the subject of deep plowing. We have found, by long experience, that everything grows better and produces more by deep, than shallow tillage—especially in the earlier stages of its growth; and undoubtedly stands a drought much better—considerations of high importance to every cultivator of the soil. But let it be borne in mind, that in cultivating, the object should be, to break and pulverize the earth deep, without much turning; and Wyche's new plows, advertised in this number of the Arator, will, we think, be found to be excellent implements for this purpose.

The rains have brought out the oats, and the corn is looking very fine and promising in this vicinity. Our gardens are also reviving, and vegetables are abundant. We never saw the foliage of trees, the grass, or, indeed, the vegetable kingdom, generally, present a more luxuriant or vivid appearance, than at this writing. Universal health, the prospect of good crops; the whistle of the steam engine; the advancement of improvement; the progress of agriculture; the preparations for the State Fair; the determined efforts of our citizens to improve, adorn and enrich our beloved old State, are cheering to every heart, and joy and gladness prevail throughout her borders.

FEE OF MEMBERSHIP—CORRECTION.

IN reply to K. P. Hill, Esq., in another part of this number of the *Arator*, it is stated that three dollars is the fee of membership of the State Agricultural Society. We did not observe the mistake until the form was printed. It should read *two*, instead of three dollars. The sum is now so small, that it will require a great increase of membership to support the institution, and it is hoped every citizen who feels an interest in the cause of improvement, will join the Society.

NEW AND PROLIFIC PEA.

"W. F. D." of "South Bond, Arkansas county, Ark.," in the last number of the *Southern Cultivator*, says he has at last found *the Pea*; that he last year planted three peas brought by a friend from China, only one of which came up; and from this one pea, though many had been destroyed by fowls, he gathered a half gallon. He thinks this pea produced five thousand from the one stalk.—It is about twice the size of the Oregon pea, is of a delicate pearl color; the pods grow in clusters, and are very easily gathered—from 15 to 20 pods can be grasped and pulled off at once. The vine is greedily eaten by stock, and grows so as to cover a space of six or eight feet in diameter on the ground, but would climb, if afforded facilities for it. He has planted his product, and if they succeed as well as last year, the half gallon will make enough to stock the country. Like the editors of the *Cultivator*, we should be glad to get a few of these wonderful peas for experiment. We hope they will prove themselves to be no humbug.

THE CHINCH BUG.

We have heard, as heretofore stated, of the appearance of this destructive little insect, in various sections of the country, but did not know until a few days ago, when we found it in our wheat, that it was so near us. Some of the best portions of the field were nearly ruined by it. Its name is legion, and if it takes to the corn, unless the abundant showers of rain continue, its ravages may cut short that important crop. It is said their march from the wheat to the corn may be checked by plowing a deep furrow between the fields, filling it with straw, and, when the army of bugs have taken shelter in the ditch, setting fire to the straw and burning them up. And possibly, a sprinkle of guano in a few of the first rows of corn. (which would help it) would arrest them.

For the *Arator*.

MR. EDITOR:—There is no science that can be learned thoroughly without practice and experience—much less can we learn the science of Agriculture from books or papers alone. No medical doctor can be safely trusted in difficult cases, until he adds experience to his studies; no chemist can well understand chemistry, until he has experimented in the laboratory, &c.; and no farmer can learn how to treat the soil in the most successful manner, until he has experience as a plowman.—All soils must not be treated alike, and the same soil must not be treated alike at all times. Circumstances, as well as soil, must materially modify the practice. It may be, however, laid down as a general rule, that deep plowing is necessary to perfection in cultivation, especially in preparing ground for the reception of the seed. This principle was well known in primitive days, and was hinted at in the parable of the sower, where it is said some seed *sprung up, but soon perished for want of depth of soil*. In practice, however, it is wonderful to relate, it is generally repudiated in this advanced and enlightened age of the world! Comparatively few work the soil deep and prepare it well previous to planting, and few do the work thoroughly and neatly afterwards. The consequence is, they are always in the *twist and cut short*, when severe droughts come. I have, in long years of experience, learned that deep and close plowing is a sovereign remedy for drought. When neighboring fields were drooping and withering, I have seen mine—that were put in proper order by *deep* plowing, before planting, and subsequently the first two plowings of the same character—green and flourishing to the last, and filling out full and large ears. They were also manured in the drills, with manure well mixed with the soil, and showed no signs of firing. Permit me to add, manuring is too little attended to. Our farmers do not prepare half the manure that they might and ought to collect on their premises. I am no advocate for *foreign* fertilizers, however valuable. We have to pay *money* for them, and they do not permanently enrich the land, like our own domestic made compost heaps; my ideas of preparing and applying which, if you think proper to publish this, may hereafter be given.

Yours respectfully,

H.

PEPPERGRASS AMONG THE CUCUMBERS.—A gentleman from the western part of the State informs us that a plant or two of peppergrass in a cucumber hill, will keep off all yellow bugs.—*N. E. Farmer*.

CATAWISSA RASPBERRY.

The Catawissa Raspberry is a native variety, entirely, grown and sold by Joshua Pierce, at Linnean Hill Nursery, near Washington, D. C., and entirely new and distinct in its characteristics in respect to the manner of bearing, and the periods of maturing its fruit, which promise to render it an object of general cultivation. From its appearance and mode of growth, I have no doubt but it is a seedling produced from the common wild black raspberry of the country, which grows in great abundance about the regions where it originated; nor can I learn that any other varieties, native or foreign, wild or cultivated, ever grew near the original plant, except, perhaps, the Thimble Berry, (*Rubus purpurea*, or *odorata*), which from the dissimilarity of the two, I do not suppose had anything to do with its production.

This bountiful gift of nature originated in the grave-yard of the little Quaker meeting-house, in the village of Catawissa, Columbia county, Penn., situated near the confluence of a stream of the same name with that noble river, the Susquehanna. The history of its discovery is simply as follows: The person who had the care of the meeting-house, from whose own lips I received the account, was in the habit of mowing the grass in the grave-yard, several times in the course of the year; and on one occasion, some eight or ten years since, observing that a brier, which he had often clipped with his scythe, showed symptoms of bearing fruit out of the ordinary season. For this time he spared the plant, bestowing upon it watchful care, and afterwards removed it to his garden.

The fruit is of medium size, inferior to many of the new, popular varieties, but is sufficiently large for all economical purposes. Its color is dark-red-purple, when ripe, and is of a very high flavor. It bears most abundantly throughout the season after the young wood on which it produces its best fruit attains a height of four or five feet, usually beginning to ripen early in August, but sometimes sooner. The fruit is produced on branches continually pushing out from all parts, successively appearing in its various stages of growth, from the blossom to perfect maturity; and often there may be counted more than fifty fruits on a single branch. As the fruit on each branch successively ripens, the later ones diminish in size, but there is no suspension of its fruiting until checked by frost. If protected in-doors, it undoubtedly would produce fruit during the winter months.

The Catawissa Raspberry is offered to the fruit growers as a grand desideratum which should be

in the possession of every one who has the means of cultivating even half a dozen plants. It is not expected that it will compete with many other sorts, as a general crop at the ordinary season of raspberries; its time of ripening and its great productiveness are the qualities for which it is particularly recommended; producing its fruit on the young growth of each year, it is in its fall crop entirely exempt from the effects of spring frost, so often destructive to many of our fall fruits, in which case, it offers a valuable substitute for such as may fail, both as a desert at hand for present use, and various economical uses as a preserve for winter.

In its cultivation, deep plowing or trenching the ground before planting, will be found advantageous. It should be planted in rows six feet apart, and at least four feet in the rows. The plow and cultivator should be freely used to keep the ground loose, and to keep down weeds or grass. The bushes may then be tied up to stakes or trellises, as with grape vines; and as it is desirable to a good fall crop, the old stalks should be cut away in winter or spring, to promote the rapid growth of the young wood.—*New England Farmer*.

FISH EGGS.

At a late sitting of the French *Société Zoologique d'Acclimation*, M. Millett detailed a series of experiments he has lately made in conveying fecundated fish eggs. The result was, he said, that the eggs, when wrapped up in wet cloths and placed in boxes with moss, to prevent them from becoming dry and being jolted, may safely be conveyed not only during twenty or thirty, but even more than sixty days, either by water, railway, or diligence. He added, that he had now in his possession eggs about to be hatched, which have been brought from distant parts of Scotland and Germany, and even from America. M. Millett stated a fact which was much more curious—namely, that fecundated eggs of different descriptions of salmon and trout do not perish, even when the cloths and moss in which they are wrapped become frozen. He had even been able, he said, "to observe, by means of a microscope, that a fish just issuing from the egg, and of which the heart was seen to beat, was not inconvenienced by being completely frozen up. This he explained by the fact that the animal heat of the fish, even in the embryo state, is sufficient to preserve around it a certain quantity of moisture."

RASCID butter, it is said, may be rendered sweet and good by churning it in new milk. Doubtful.

THE GUANO CONVENTION.

THIS convention, held in Washington City, the 10th of June, at the Smithsonian Institution, was fully attended by an imposing gathering of planters and farmers from the States of New York, Delaware, Maryland, Virginia and North Carolina. The proceedings and debates, says the National Intelligencer, were quite interesting, and brought out frequent displays of high intelligence and great breadth of mental and moral scope of power.

The convention opened by the appointment of H. S. Key, Esq., of St. Mary's county, Md., President, and Albert Emory, Esq., of Queen Anne's county, Md., Secretary, and a Vice President from every State present except Maryland.

Mr. Calvert laid before the convention the copy of a communication addressed to the Secretary of State by J. Randolph Clay, United States minister to Peru, dated Lima, April 8, 1856, stating that neither the Government of Spanish America nor their citizens have the privilege of purchasing guano from the Chinchas or any other islands belonging to Peru, at a certain stipulated price, by treaty, through municipal regulations or sufferance. All the guano exported from Peru is shipped for account of the government and sold in foreign markets, under special contracts, by agents, who receive a commission for chartering vessels, and on the sale of the article. No exception is made in favor of any foreign nation or its citizens.

Peruvian citizens are permitted to take from the Chincha islands and "Pabellon Pica" without charge, a sufficient quantity for the agriculture of the country; but the government is very careful to prevent any portion of it being exported.

SALT TO DESTROY WORMS, &c.

In that excellent paper, the Germantown Telegraph, we find some remarks on the value of salt to destroy worms on vegetables. We copy what follows: A weak brine, not exceeding the strength of sea water, proves a remedy for the "squash destroyer," one of the insidious and persevering, as well as voraciously destructive enemies with which the gardener and fruit grower is called to contend. It is also a most effectual preventive of *aphides*, or plant lice, vermin which prey upon the cabbage and turnip tribes. In every instance of the application of brine to those vegetables that has fallen under our observation, its success has been complete. No injury need be apprehended from a very liberal application, say one quart to a plant, if the solution be of the strength indicated.

All the cabbage tribe are liable to be attacked and fatally injured by minute maggots, resembling, very nearly, the maggots in cheese, and which are doubtless the larva of some fly. There is another enemy, also, by which they are frequently infested—a small grub, similar, in many respects to those found in corn and potato hills, and which not unfrequently prove very destructive. Salt water applied to the hills will have a tendency to arrest their depredations, and if the application be repeated frequently, say once in two or three days, it will effectually destroy or drive them off.

The water, however, should not be allowed to come in contact with the foliage, in this instance, but should be applied to the soil immediately around the stalks, but without coming in actual contact with them. To destroy the first named insect, it may be applied in a state sufficiently dilute to admit of a perfect ablation of every part of the foliage; but as we said before, care must be taken not to make it too strong, or it will destroy the plant. Every cook knows or ought to know, that the washing of cabbage, lettuce, spinach, &c., in salt water before cooking or preparing for the table, is sure to expel every species of insect which so frequently seeks a habitation or a shelter in these vegetables.—*Western Agriculturist*.

From the Southerner.

FOSTER'S COTTON SEED SOWER.

MR. HOWARD:—As an act of simple justice to a recently invented implement, I pen this notice. I allude to Foster's Cotton Seed Sower, which was patented during the month of January of this year, and first exhibited here at our March Court. Being defective in several particulars, it was taken to Norfolk and the suggestions made by some of our most practical planters carried out. It was again exhibited at several farms in the county during the cotton planting season and practically tested. The working of the machine gave satisfaction to proprietors and overseers. Several of the latter were heard to say they would have been pleased to have had the use of one through the planting season.

It was worked on the farms of Messrs. W. S. and T. W. Battle, and Mr. Henry Mordecai, up the river, and on Mr. Baker Staton's and on Panola, in this vicinity, and on one or more farms on Town Creek.

So far as we have heard, the cotton seed sown by the implement has come up well, and we regard its working as a success beyond dispute.

About five acres were planted with it on Panola, which is up well and presents a more uniform ap-

pearance than the hand sowing, and it is generally conceded by practical men, that it will be easier to work both with plows and hoes, when the cotton presents a straight line and the stand is uniform.

We have heard the opinion expressed (in which we entirely concur) by some of our most experienced planters, that Foster's Cotton Seed Sower will mark an era in cotton planting.

The implement is the invention of a Mr. Foster, of Palmyra, Wayne County, New York, and was introduced here by Dr. E. C. Winchester.

Dr. W. informed me that he would have one on exhibition at our next State Fair in October, and would have them for sale by the next cotton planting season. Very respectfully your ob't. servant,
JOHN S. DANCY.

From the New England Farmer. THE DOUBLE PLOW.

MR. EDITOR:—I have a piece of high loamy land that I wish to plant with corn the ensuing season. I wish to plow it deeper than it has been in times past, and should like some information about the double plow. I should like to know what proportion harder they draw than No. 2, Eagle. I have never seen one, but if they are an improvement, I should like to try one, if they can be managed in land where there is some fast rocks, but not many small ones.

I have been actively engaged in the cultivation of the soil for more than half a century, and my interest in it increases with my experience. I am satisfied that it is the best employment for all who are calculated to follow it.

Making money should not be the sole object of the farmer; utility should have some weight with him. If he can take one acre of unproductive land, and make it produce fifty dollars worth of the necessities of life, he has done much towards supplying the real wants of the race. Another has dug five hundred dollars worth of gold in the mines of California; he has done nothing towards supplying the real wants of life, but has been living upon the products of the farmer all the time.

THOS. HASKELL.

Gloucester, March, 1856.

REMARKS.—It is said by good judges who have used the double plow, that it requires no more team to plow ten inches deep with the double plow, than to do it with a single mould-board. Indeed, they say it does not require so much team; and from the experience we have had—and we have used the double plow considerably—we are inclined to agree with them. The double plow does the work better, because it separates the sod or turf from the lower part of the furrow, and lays it all snug on the bottom of the preceding furrow. When plowed well in this way, the field presents a mellow seed bed, which may be wrought without disturbing a single turf.

CULTURE OF MILLET.

THOSE who are likely to be short of fodder for the winter, (says the Country Gentleman) may provide against the evil that threatens them, in a variety of ways—by raising roots, corn fodder, &c., &c. One very excellent way of providing a good hay or fodder for winter, consists in cultivating a crop of millet. This crop has two recommendations of no small account: 1st. It may be sown *after* planting is all over, or at any time before the middle of June;* and, 2nd. It does not require to be harvested until the hurry of other harvesting is over with. To secure *fine*, soft grass or hay, sow the seed thick, say at the rate of three pecks or one bushel to the acre, broadcast. If you wish a patch for seed sow that thinner, say about one peck to the acre. What of this is not wanted for next year's seed may be ground. It makes a palatable and nutritious food. That intended for hay must be cured like other hay. Horses, colts, cows and calves, will eat it in preference to timothy. Sheep also, eat it greedily. Millet does best on dry or sandy soils.

DISINFECTING AGENTS.

THE best and most simple disinfecting agent known (says the Scientific American) is the chloride of zinc. It is made by dissolving zinc in muriatic acid, and is applied in a diluted state, to foul and offensive drains, cesspools, &c. The sulphate of zinc, however, is nearly as good, is cheaper, and is more easily managed. It can be purchased at any druggists in the form of a salt. A pound of it dissolved in two pails of warm water and thrown into an offensive cesspool, will soon deodorize it. During hot weather this disinfecting agent should be applied pretty freely in thousands of places in New York and other cities. Copperas (sulphate of iron) may be applied in the same manner and for the same purpose. It is not such a good disinfectant as the chloride of zinc, but it is much cheaper.

IMPROVED FERTILIZER.

R. P. FORLONG, of Bristol, Eng., has patented a new manufacture of manure, which is stated not only to be a fertilizer, but capable of protecting the young shoots of plants from the turnip fly, and vermin. The patentee takes bone dust and the flour of sulphur, and mixes them together in equal quantities, by weight. He then subjects them to just such a heat in a furnace as will fuse the sulphur, and cause a thorough combination of the materials. When this effect is obtained, he re-

moves the compound and sets it aside to cool and solidify. After this it is ground fine between a pair of burr stones. The richness of this fertilizer is reduced for use by mixing it with an equal weight of gypsum. It is applied in the usual way—like guano. From this description, any farmer who has a small grinding mill will be able to make this new fertilizer, and give it a fair trial.

SALTING HAY.

MR. EDITOR:—In hurrying seasons, when there is much bad weather, it is sometimes necessary to get hay in when imperfectly cured, or not sufficiently made to prevent its becoming musty when mowed. When this is the case, the use of salt is highly beneficial; it prevents must, and gives a fine flavor to hay that would otherwise be almost worthless for ordinary purposes. From one peck to one peck and a half to a ton, will be found enough to prevent mould, unless the hay is very damp, when the application of half a bushel, or even a larger quantity, will be allowable. Meadow hay may be preserved by the use of salt, and its value greatly increased thereby for feeding purposes, especially when given to sheep.

And here permit me to remark that the very best article of winter food that can be provided for sheep, if cut before it becomes over ripe, and properly made, is the coarse grass abounding in our natural meadows. I have generally cut from five to eight tons of this grass, and although of the coarsest quality of meadow hay, I have wintered my sheep on it without the assistance of any other hay, and carried them through more successfully, and with less loss than I am confident could have been done by providing them with any other keeping. There is something peculiar about this hay that renders it extremely palatable to the sheep, and which prevents their soon becoming clogged; their appetite for it continuing unimpaired through the season, unless vitiated by the occasional use of other and more luxurious food. Since the introduction of chaffing machines, I have used but little long feed, preferring to cut all articles used for fodder, be its character or quality what it may. I am assured that a very great saving is effected in this way. One thing, however, should be borne in mind, and that is, that the actual value of all fresh grass is greatly increased by *early cutting*. To let it stand until the fibre has become hard and wiry and the seed mature, is always an injury to the grass. Probably the same rules for cutting and curing meadow hay should be adopted in curing

English hay. The seed constitutes a valuable portion of all hay, and when the cutting takes place about the period of 'inflorescence, the hay, although it requires somewhat more time and labor to make it, is of greater value than when it is cut at a later period.

The poorest grasses produced in our bogs and swamps, if cut before they become dead ripe, and cured with salt, will be eagerly eaten by most animals, and may be made greatly to assist in carrying through a stock of cattle when there is a scarcity of other feed. Hundreds of tons of meadow hay, generally of the coarsest kind are cut in some sections, and thousands may be cut, annually, in the same townships, without exhausting the natural supply. When its value for feeding purposes is duly appreciated, a more strict economy of so valuable an article will be observed, and no inconsiderable saving effected by those who can procure it, and who know to what important uses it is capable of being applied.

A. SUSSEX FARMER.

Germanstown Telegraph.

A PROFITABLE COW.—A friend in the town of Tully, informs us that Mr. Brown, of that town, owned a cow last year, which is now owned by a gentleman of the same name in Delphi, from which, during the year, he made 476 pounds of butter, which, at the average price of that article during the year (22 cents per pound,) netted \$104.75.—The present owner has wisely refused the sum of \$100 for this cow. She is described as deeply red, of medium size, and of fine appearance.

Tribune.

Coach Making and Repairing.

THE UNDERSIGNED having taken the shop known as JENKINS' OLD STAND, would announce to the people of North Carolina generally, that he is prepared to manufacture in a beautiful and durable manner, Coaches, Buggies, Rockaways and vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c., of every description, and as my facilities for repairing are good, the public may rely upon having their work done at the *lowest possible rates*, and in a manner *unsurpassed* by any other establishment in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st. 1856.

WYANDOT CORN--DESTRUCTION OF MOLES, ETC.

EDITORS SOUTHERN CULTIVATOR:—I see several inquiries in the Cultivator for the present month, by your subscribers, one of which I shall reply to. But my main object in this communication is to say something on the subject of Wyandot Corn.—I must confess, after reading the accounts in its favor, given in the March number of the Cultivator, my "sights were raised" pretty high. I, therefore, sent the only gold dollar I had to a gentleman who advertised it for sale; he promptly returned me about half a pint, from Staten Island. After receiving and opening the little sack my feathers fell, as I saw at once it was a poor article—very light and chaffy. But to insure its having a fair chance, I gave a part of it to three of my friends to plant—the balance I planted at three different times—much the largest part I planted the first day of May (the ground in fine order and the weather good) and there is but four grains from the whole lot that came up, and that looks but little more like making corn than so many plants of Gamma grass. If the lot I received is a fair sample of Wyandot Corn, I have no further use for it, and pronounce it to be five times more of a humbug than the Oregon Pea or the Resene Grass.

One of your subscribers asks for a remedy for the ravages of moles. The best I can give him is to soak ground peas or corn in a strong solution of nux vomica or strychnine and place the bait in the trash where the moles pass—they will eat it and poison themselves. Another plan is, to make something on the order of a dead-fall, with two or three rows of sharp spikes, one in the centre, put in lengthwise of the block: press the earth down firmly where the moles have been passing and with triggers set the trap over the track where the moles will pass; let the end of the long triggers be broad and thin, and placed on the ground: the moles in passing will raise the ground and throw the trap and be caught by those spikes. Yours very respectfully,

JOHN FARRAR.

Atlanta, Ga., June, 1856.

PAYMENTS FOR ARATOR

SINCE JUNE NO.

Liles, Nelson P., Anson county,	\$1
Caldwell, Hon. D. F., Salisbury,	2
Blaeknall, Franklinton,	1
Jones, W. H., Raleigh,	1
Person, Hon. S. J., Wilmington,	1
Etheridge, J. H., Colerains,	1
Williams, Allen, Washington, N. C.,	1
Selby, T. H., Raleigh,	1
Powell, P. M., Powellton, (H. & W.)	1
Hill, K. P., Cheraw, S. C.,	1
Lutterloh & Elliott, Wilmington,	1
Carrin, Fleming B., Waterloo, (L.)	1
Coleman, D., Burnsville,	1
Norman, James C., Mount Airy,	1

Ward, Rippon, Paetolus,	1
Jeffreys, J. Robert, Pacific,	1
Small, Joseph, Pittsboro',	1
Robertson, W. W., Reidsville,	1
Somervell, Joseph B., Wesley, Tennessee,	1
Littlejohn, Gen. Jos. B., Louisburg,—(H)	1
Wilson, Rev. Dr. Alex., Melville,	1
Wilson, Dr. Alex., Jr., Meadow Creek,	1
Carver, Henry, Roxboro, N. C.,	1

The following payments, for which receipts were given, were made in May:

Pomeroy, W. L., Raleigh, for Arator and advertising,	\$10
Drake, E. D., Warrenton, (H. and W.)	1

INDEX TO JULY NUMBER 1856.

Agricultural Society U. S.,	492
A profitable cow,	510
Blackberry,	493
Broken China, how to mend,	503
Cabbage, Winter,	491
Cotton Planting,	494
Curb or Check Rein for Horses,	495
Coal, North Carolina,	497
Cattle dying,	503
Care for Colts,	504
Communication,—(H.)	506
Deep Plowing,	505
Disinfecting Agents,	509
Fee of Membership—Correction,	506
Fish Eggs,	507
Foster's Cotton Seed Sower,	508
Grafting the Grape,	501
Glanders, Contagiousness of,	501
Gardening for the South,	499
Hail, destructive,	497
Irrigation,	489
Improved Fertilizer,	509
Land, Economy in the use of,	485
Manure Absorbents,	493
Organic and Inorganic,	490
Peaches, Description of,	481
Pear Blight,	484
Plums, Hardiness of,	485
Pea Fallow—Composts,	486
Pea, Japan,	491
Peppergrass among Cucumbers,	506
Catawissa Raspberry,	507
Questions Answered,	498
Rats, novel method of clearing,	491
Superphosphate on Corn,	488
Suggestions for the Farmer,	492
State Shows,	499
Stump Extractor,	503
Salt to destroy worms, &c.,	508
Salting Hay,	510
Turpentine Barrels,	497
Texas, Editor's Visit to,	499
Timber, Preservation of,	503
The Chinch Bug,	506
The Guano Convention,	508
The Double Plow,	509
To cure the bite of a Snake,	510
Wash for Burns,	496
Watermelons,	496
Work for July,	505

WYCHE'S CULTIVATING PLOW.

PATENTED 26TH FEBRUARY, 1856. (The Bladed Plow,) awarded \$20 premium at the last N. C. State Fair; with cutting blades in the place of a moldboard; cuts, divides and turns over the soil; depositing the finer parts in the furrow, and turning over the turf, clods, &c., on the surface. Is cheap, light, and lasting, and easy to both driver and team. Admirably adapted to almost any purpose for which the plow is used.

For license to sell, with further information, address **W. E. WYCHE.**

Brookville, Granville Co., N. C.

J. H. Gooch, Oxford, N. C., solicits orders for the above plows.

June 16, 1856.

4-tf.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT. ented 8th of January, 1856—called the Mole Plow; with vertical cutters near the edge of a horizontal share, for dividing the furrow slice, and a curved cutter on the rear of the share for turning the whole in towards the plow, or as far on the opposite side of the share as may be desired. Adapted to siding, listing, breaking turfy or hard land, subsoiling, and many other purposes. Is light, cheap and strong; and supposed to be the most perfect pulverizer in use.

For license to sell, with directions for manufacturing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

WILLIAMS & HAYWOOD, **RALEIGH, N. C.**

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,

Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,

SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

JOB WORK executed with neatness and dispatch at this office.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,
PUBLISHER,

BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including Records for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARDING.

Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of
SPRING AND SUMMER CLOTHING, with a well selected stock of Gents' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, AUGUST, 1856.

NO. VI.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

DESCRIPTIVE CATALOGUE

Of Peaches that have been tested by actual bearing, previous to and during the year 1855, by JOSHUA LINBLEY, New Garden, Guilford Co., N. C.

[Continued from page 481.]

DESCRIPTION OF PEACHES—1855.

56. *Cerro Gordo, C.*—This new peach is one of the very finest. The tree grows very thrifty, and has globose glands and small flowers. The fruit is large, round, of a pale yellowish white color, with some blotches of pale dull red next the sun. The flesh is rich, juicy, sweet, fine flavored and most excellent. The tree is a good bearer, and the fruit ripens the first part of August.

57. *Admirable C.*—This tree is a thrifty grower, with globose glands and small flowers. The fruit is large, of a pale yellowish white color, with some touches of red next the sun, flesh rich, fine flavored and excellent, and it is a good bearer, and the fruit ripens the first half of August.

58. *Old Mixon, F.*—This tree is of thrifty growth, with globose glands and small flowers. The fruit is

large, nearly round, of a greenish white color, with some touches of red on the sun side—flesh, rich, juicy, fine flavored and excellent. The tree is a good bearer, and the fruit ripens early in August.

59. *Old Mixon, C.*—This tree grows thrifty, has globose glands and small flowers. The fruit is large, slightly lengthened, of a white color, with some red next the sun; flesh rich, juicy, very fine flavored and excellent, and the tree is a great bearer, and ripens its fruit the first part of August.

60. *Large White.*—This tree also grows thrifty, has globose glands and small flowers. The fruit is large, somewhat lengthened, color pale yellowish white, with a marbled red cheek. The flesh is rich, juicy and excellent, and the fruit ripens the middle part of August, and bears well.

61. *Anna Ruffin.*—This tree grows rapid, has uniform glands and small flowers. The fruit is large, white, rich, juicy and excellent, ripens its fruit the first half of August, and is a good bearer.

62. *Mary's Choice.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is large, of a yellow color, with a red cheek. The flesh is rich, juicy and excellent; the tree is a good bearer, and the fruit ripens the middle part of August.

63. *Spanish, C.*—This tree grows thrifty, has globose glands and small flowers. The fruit is large, nearly round, of a pale yellowish white color, with a red cheek next the sun; its flesh is rich, very juicy, fine flavored and excellent. The tree is a full bearer, and the fruit ripens the first half of August.

64. *Old Spanish, C.*—This tree is a thrifty grower, has globose glands and small flowers. The fruit is

large, nearly round, of a greenish white color, with some touches of dull red next the sun. The flesh is rather rich, juicy and of good quality. The tree is an abundant and sure bearer, and the fruit ripens early in August.

65. *Hardy Galland, C.*—This tree is rather thrifty, with uniform glands and small flowers. It is a small round peach, yellow with a deep red skin;—flesh juicy and good, and the tree an enormous bearer, ripening early in August, but the fruit is so small that it is not worthy of being cultivated.

66. *White Pineapple, C.*—This tree grows thrifty, has globose glands and small flowers. The fruit is large, of a white color, touched off with a red blush on the sun side. The flesh is rich, juicy, fine flavored and excellent, and it ripens its fruit about the middle of August.

67. *Morris' White Rare Ripe.*—This tree grows thrifty, with uniform glands and small flowers. The fruit is rather large, nearly round, of a beautiful pale yellowish white color, with some touches of red next the sun; flesh rich, juicy, very fine and excellent. The original tree brought from the North did not bear well, but a young tree budded from it has borne very full; this has happened in several other cases—ripe middle of August.

68. *Columbia.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is large, of a yellowish red russet color in stripes and blotches; flesh yellow, much stained with red, rich, juicy and excellent, and it is a good bearer, ripening its fruit about the middle of August.

69. *President.*—A very thrifty tree with globose glands and small flowers. The fruit is large, nearly round, of a greenish white color, with a touch of red on the sun side; flesh rich, juicy and excellent, and the tree is a hardy and great bearer. The parent tree from the North is now growing and bearing well at the age of 27 years. It may be cultivated extensively to good profit. It ripens about the middle of August.

70. *Late Red Rare Ripe.*—A thrifty growing tree with globose glands and small flowers. The fruit is large, nearly round, of a pale greenish white color, with a marbled dull red cheek, making a grayish appearance; the flesh is rich, juicy, fine flavored and excellent; ripe middle of August.

71. *Marrissania Pound.*—This tree grows thrifty, with globose glands and small flowers. The fruit is large, nearly round, of a pale greenish white color, with some blotches of dull red next the sun. The flesh is rich, juicy and excellent, with a peculiar saccharine flavor that is very agreeable. The tree bears well, and the fruit ripens the middle of August.

72. *Motta.*—This tree grows thrifty, has serrated leaves and large flowers, and it is one of the most extraordinary bearers, so that often the fruit is quite small; but when properly thinned it is of good medium size, and beautifully colored, with pale greenish white, striped with red on the sun side. Its flesh is rich, juicy and of the finest flavor; but when left to over-bear it is very small and poor; ripe about the middle of August.

73. *Scarlet Admirable.*—This I received for a free-stone. It is a thrifty growing tree, with serrated leaves and large flowers, and is one of the greatest bearers. It is of medium size, greenish white, with a marbled red cheek, sweet and pleasant, but not one of the finest; and as there are so many larger and finer kinds, ripening with it, it is not worthy of attention; ripe early in August.

74. *Washington.*—This tree grows thrifty, has globose glands and small flowers. The fruit is large, rather oblong, of a pale greenish white color, with a red cheek next the sun, more or less according to exposure. The flesh is rich, juicy, fine flavored and excellent, and it bears well, and ripens about the middle of August.

75. *Washington, C.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is rather large, of a pale yellowish white color, with some touches of red next the sun. The flesh is rich, very juicy, fine flavored and excellent; and though not one of the largest, it is one of the finest of aliens and ripens about the 20th of August, and it deserves to be generally cultivated as it is one of the best bearers.

76. *Late Red Magdalen.*—This tree grows thrifty has globose glands and small flowers. The fruit is very large, nearly round, of a pale greenish white color, with a red cheek that often covers most of its surface. Flesh rich, juicy, and excellent, and the fruit, which is one of our noblest, ripens about the 20th of August, and bears well.

77. *Carpenter.*—This tree grows thrifty, has uniform glands and small flowers. The fruit is large, a little oval in form, of a greenish white color, with some touches of red next the sun; flesh rich, juicy and fine. The tree bears well, and the fruit ripens about the 20th of August.

78. *Crawford's Late.*—The tree grows thrifty, has globose glands and small flowers. The fruit is very large, nearly round, of a yellow color, with a red cheek; flesh rich, juicy and excellent. The tree bears well, and the fruit ripens about the 20th of August, and is one of our noblest peaches.

79. *Red Cheek Melocoton.*—This is a thrifty growing tree with globose glands and small flowers. The fruit is rather large—rather oblong, of a yellowish color, with a red cheek; flesh rich, juicy and ex-

lent. The tree bears well, and the fruit ripens about the 20th of August.

80. *Nivite*.—This tree grows thrifty, has globose glands and small flowers. The fruit is rather large, round, of a greenish white color, with a touch of dull red next the sun; flesh rich, juicy and excellent, and the tree is a good bearer, but the fruit cracks bad in wet weather; ripe middle of August.

81. *Late Admirable*.—This tree is also of thrifty growth, has globose glands and small flowers. The fruit is rather large, nearly round, but slightly lengthened; color pale greenish white, with a touch of dull red next the sun; flesh rich, juicy and excellent.—The tree is a great bearer, and the fruit ripens about the 20th of August.

82. *Green Catharine*.—This tree grows very thrifty, has uniform glands and small flowers. The fruit is rather large, round, of a pale green color, sometimes a little touched with red next the sun; rich, juicy and fine. It is an abundant bearer, and the fruit should be thinned in overbearing seasons, then it will be beautiful and excellent. Though it bore exceedingly full with me this wet season, it ripened all its crop well, whilst many others rotted bad. It ripens the middle of August.

83. *Large Newington, C*.—This tree grows thrifty, has globose glands and small flowers. The fruit is large, round, of a white color, with a little touch of red next the sun; flesh rich, juicy, sweet and excellent. The tree is a good bearer, and the fruit ripens about the 20th of August.

(To be continued.)

LABELS FOR FRUIT TREES.

MUCH of the confusion of nomenclature of fruits arises from the little precaution generally used to preserve the names. If, when a tree comes into bearing, the fruit is found to be particularly fine, persons at once desire to obtain grafts, and for want of a better name they attach that of the person from whom the grafts were obtained, although in most cases, the fruit is well known to pomologists by another name. Nurserymen also frequently perpetuate errors in the same way. There are doubtless many fine seedlings with local names only; but in a large majority of cases these local names are given to old and well known fruit. To guard against such errors and correct those already existing, will be the work of Horticultural Societies and individuals who are well acquainted with the common fruits of the country; but the greatest safeguard against the repetition of them in future is the careful marking of every young tree set out. Though, in addition to putting the names on the trees, we advise the further precaution of plotting out the ground of the

orchard on paper, and marking the locality of each tree with its name. This once carefully done removes the possibility of errors.

The labels which come from the nursery on trees are not designed to be permanent, and they should be replaced with permanent ones at the first leisure after planting. Be particular that the wire by which the label is attached is not round the body of the young tree, otherwise it will, as the tree grows, be buried in it and materially injure the tree. The very best label we have ever used is a strip of thin sheet zinc, about four inches long and three-fourths of an inch wide at one end, cut so as to taper to a point at the other end; which after writing the name of the tree, the date when set out, and where obtained, can be bent round one of the small branches, with the writing outside, and as the branch grows it will expand without injuring it.

The ink for writing on these labels is made thus: Take of verdigris and sal ammoniac each 2 drachms, lampblack 1 drachm, water 4 ounces, to be well mixed in a mortar, adding the water gradually. It must be kept in a glass stopped vial. Write on the zinc with the ink, after shaking it well, in a quill pen; and after it is dry you may expose it to the weather or bury it in the ground for years, and it will be as legible as when first written.—*Louisville Journal*.

FIRST PRINCIPLES OF FARMING.

1. ALL lands on which clover or the grasses are grown, must either have lime in them naturally, or that mineral must be artificially supplied in the form of stone lime, oyster lime or marl.

2. All permanent improvement of lands must look to lime as its basis.

3. No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.

4. Mould is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover and the grasses, the turning in of green crops, or by the application of compost rich in the elements of mould.

5. All highly concentrated animal manures are increased in value, and their benefits prolonged, by admixture with plaster, salt, or with pulverized charcoal.

6. Deep plowing greatly improves the productive powers of every variety of soil that is not wet.

7. Subsoiling sound land—that is, land that is not wet—is also eminently conducive to increased production.

8. All wet lands should be drained.

9. All grain crops should be harvested before the grain is thoroughly ripe.

10. Clover, as well as the grasses intended for hay, should be mowed when in bloom.

11. Sandy lands can be most effectually improved by clay. When such lands require liming or marling, the lime or marl is most beneficially applied when made into compost with clay. In slacking, salt brine is better than water.

12. Draining of wet lands and marshes adds to their value, by making them to produce more, and by improving the health of neighborhoods.

13. To manure or lime wet lands, is to throw manure, lime, and labor away.

14. Shallow plowing operates to impoverish the soil, while it decreases production.

15. A bushel of plaster per acre, sown broadcast over clover, will add one hundred per cent. to its produce.

16. Periodical applications of ashes tend to keep the integrity of soils, by supplying most, if not all, of the organic substances.

17. Thorough preparation of land is absolutely necessary to the successful and luxuriant growth of crops.

18. Abundant crops cannot be grown for a succession of years, unless care be taken to provide an equivalent for the substances carried off the land in the products grown thereon.

19. To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, apply top-dressing, and roll them up.

Stiff clays are benefitted by fall and winter plowings.—*Western Agriculturist*.

CHEAP WAY OF UNDERDRAINING.

THERE is no one subject that demands more attention among farmers than the underdraining of low and swampy lands. In passing through the farming districts, we see many large plats of land which are enclosed and the owners are paying taxes on, which do not yield annually the cost of keeping them. Now these useless acres could be made to pay the interest of one hundred dollars for each, annually, while the interest on the cost of improvement would not be one dollar an acre. Many have supposed, as their works show, that an open drain from twelve to eighteen inches deep and wide, is all that is required to make wet land productive.

In draining, the first step is to procure suitable tools for the business. Common drains should be dug fifteen inches on the top and three at the bottom, three feet deep on all soils free from stones.—This size is the cheapest. If the banks are solid, the cheapest tile that I have used, is to lay in cedar, pine, black-ash, or any green poles that will go down within six or eight inches of the bottom: they should

be stepped on and crowded down solid; then fill in one-third full of earth, pound it down with a paver's mallet; then fill the other third as before, and finish off.

One great difficulty in filling drains is, that the earth is left too loose, so that mice make holes which let in the water from the surface, which will soon spoil a drain that is made of stone, poles, or brick. Water is carried under ground much cheaper than on the surface, and a field of several open drains is not good economy. When covered under ground, they may be plowed over and rendered productive. Where drains are needed in stony soil, the bottom of the ditch should be wide, so that one could stand and work in it; and stones laid so as to carry off the water. In some sections tile would be the cheapest. No farmer who has wet lands should neglect to drain them because they cannot get tile.

Some plats of land are made dry by a ditch around them. Others will require several ditches through them. Such land, when made dry, will be the most productive. Carrots and potatoes will do well on such soils, and most of the spring crops. The grasses and hay from such soil will be worth twice as much as the same weight from lands that are too wet. If the wet lands which are enclosed in this State could be made dry, they would add millions to our farming products and our commerce.

Three spades are used to make narrow drains—one common one, one blade five inches wide and fourteen long, and one five inches at the top and three at the end of the blade, handle five feet long, so that one can stand on the top of the ditch in taking out the lowest part of the earth.—*Tennessee Farmer*.

PNEUMONIA, OR "THUMPS" IN HOGS.—*Editors of Southern Cultivator*: In looking over the February number of the Cultivator, I see that "Sam," of Arkansas, complains of Pneumonia among his hogs. Now, I do not know what it is, unless it is what we about here call "thumps." It is evident that the "thumps" is a disease of the lungs. If that is it, I have been told by a man of veracity that Epsom salts was a certain cure. He did not know how much he gave, but thinks it was about half a tablespoonful twice a week, mixed in the feed or slops. If you think this fits "Sam's" case, or will be worth anything you can give it to your readers, and if not, lay it aside. Yours truly,

C. L.
Hayneville, Ga., May, 1856.

To be thrown upon one's own resources, is to be cast upon the very lap of fortune, for our faculties undergo a development and display an energy of which they were previously unsusceptible.

ENCOURAGEMENT OF SHEEP HUSBANDRY.

The principal article of profit resulting from the rearing of sheep, or at all events that one which is chiefly taken into account by the farmer, namely, wool, has not for the past two years brought a price in the market quite so satisfactory as many other articles of farm produce, particularly grain. While the best staple of wool raised among us would, with difficulty, find a market at forty cents per pound, prime wheat has commanded in cash from two dollars to two dollars and twenty-five cents per bushel. Reckoning the weight of fleeces at three pounds each, which is a high figure for the average of fine-wooled sheep, and then multiply the price obtained by the number of sheep an acre will ordinarily sustain, it will be seen that, on comparing the value of the product with that of an acre of good wheat, say twenty bushels, the balance will be vastly in favor of the latter.

Theoretically, then, so far as profit is concerned, it would be much more beneficial for a farmer to sell off all his sheep and other stock, put in every acre of his farm to wheat, and repeat it every year. But in practice, such a course of procedure would be the worst possible economy. A farm so treated would become impoverished in the first ten years; the twenty bushels of wheat which might, if all things favored, be produced the first year, would speedily dwindle down to nothing, and a long and expensive system of manuring would have to be resorted to in order to restore to the land its original fertility.—But the experience of our farmers in the raising of wheat comes in opposition to this theory of profit. The casualties that attend its culture, and the crop, from its many enemies, both animate and inanimate, all combine to render its profits doubtful. The Hessian Fly, the midge, the killing effects of frost in winter, and the disastrous blighting of the rust in summer, are heavy drawbacks to the certainties of a good crop. There is no moment of safety from seed time to harvest, nor even then. The brightest hopes of the wheat grower last season were blighted at the latest moment by untimely rains. We do not intend here to maintain that wheat raising is unprofitable, but merely to say that actual experience does not come up to the theoretical profits of its cultivation.

Other grain crops are more certain of success, but not so profitable in individual instances. Corn is generally a sure crop, but that finds enemies in vernal and autumnal frosts, the crow, the cut worm, excessively cold, wet summers, and other drawbacks. Oats is one of the surest grain crops, but it is at the same time the lowest in price, and among the grains yielding the least profit, while at the same time it is very exhausting to the soil.

The great branch of farming, aside from the cultivation of grain, is the rearing of domestic animals. In many portions of the country it is made the leading pursuit, as the lands are better adapted to grazing than tillage; but even in our best grain-producing sections, it would be of great advantage to pay this department more special attention. The agriculturist, who constantly cuts and carries away the products of his soil, will be certain to bankrupt its fertility. The sure way to obviate this undesirable result is to keep upon the place the largest number of animals that can be made profitable, and then economize their manures to be returned to the soil as a compensation.

A flock of good sheep ought never to be omitted from the catalogue, as they can be kept at a comparatively small cost, and, as a general thing, give an ample return. The fleece, which is considered the chief item, comes into the market at a time when the farmer has little else to dispose of, and its sale is often relied upon as the only resource for the payment of spring interest and instalments, and the necessary summer expenses. Although at times the value of the staple runs low, there is always certainty of a cash market at some price. The fleece of the sheep is an article of absolute necessity to the whole civilized world, and hence no fear need be entertained that a change of fashions, of tastes, or pursuits, will permanently endanger the profitableness of its production. There must be variations in the price of wool, as in that of all other products; but any unusual depression of a year or two years' duration, will be followed by better times, and we see, at present, indications of this returning tide.

But, aside from the value of the wool, there are many other considerations in favor of sheep-raising to a certain extent by nearly every farmer. The rapidity of increase of the flock is an important consideration. The ewes are competent to become dams the second season, and not unfrequently the twins produced are sufficient to more than compensate for all the losses that may occur during the whole year. The young farmer of limited means, especially at the West, whose income as yet amounts to just sufficient to meet his expenses, cannot purchase stock extensively and of the most expensive kind; he must be contented to wait until he can rear them himself, and this is an operation that requires time. Sheep come to maturity and increase much faster than neat cattle or horses, and will afford him a nucleus around which, in a few years, will be clustered animals of all kinds which he desires; for the wool and the increase of his flock can be sold and the money reinvested, or an exchange be made of them for other cattle.

We recollect, not over twelve or fifteen years ago, when sheep were slaughtered in the town of East Bloomfield, in this State, by the hundred thousand annually; their carcasses, except the hams, were tried up whole, and tallow sold in New York, wholesale, at six cents the pound. The hams were distributed by peddlers all over Ontario and the neighboring counties, at one dollar and a half the hundred weight, and farmers, then, considered sheep-raising profitable employment. The dressed carcasses of just such sheep will sell in our streets to-day for four or five cents per pound, and the pelt is worth, at the same time, one dollar more; thus netting the farmer from three to four dollars per head, and a good fat sheep on the foot in New York city will bring from five to eight dollars. We know a young farmer in a neighboring town who refused, last fall, ninety-five dollars for fifty good grade lambs one year old this spring.

Giving, therefore, all the complaints about the low price of wool due weight, does not the consideration of the increase for marketing purposes render sheep husbandry a profitable employment? Every farmer who raises grain, can keep a moderate flock of sheep without materially adding to the expenses of the farm. With proper care and attention, such as every man is bound by the laws of humanity to bestow upon his animals, very little sickness will occur; the chances of loss are not half so great as in the raising of wheat.

Mutton is one of the most nutritious, palatable and healthful of meats, and comes in excellent time upon the farm during summer, after the season of veal is past, and before the time of autumn killing comes on. Amid the laborious duties of haying or harvest, a fat sheep to take the place of so much salt pork as is usually consumed, is duly appreciated by laborers in the field.—*Wool Grower and Stock Register*.

ANTIDOTE TO POISON.

A CORRESPONDENT of the London Literary Gazette, alluding to the numerous cases of deaths from accidental poisoning, adds:

"I venture to affirm there is scarce even a cottage in this country that does not contain an invaluable, certain, immediate remedy for such events—nothing more than a desert-spoonful of made mustard, mixed in a tumbler of warm water, and drank immediately. It acts as an emetic, is always ready, and may be used with safety in any case where one is required. By making this simple antidote known, you may be the means of saving many a fellow creature from an untimely end."

REVOLUTION IN FARMING.

THE following article from the *Pulaski* (Tenn.) Citizen, one of the best papers in the country, shows the growing interest in agricultural improvement.—Many of the newspapers of Tennessee have taken the matter in hand, and are ardently urging upon their farming friends the necessity of more thorough and careful tillage, a more general introduction of farm machinery, whereby labor may be economized, and a closer attention to the interests of agriculture generally.—*Tennessee Farmer*.

The world's physical advancement has usually been measured by the changes made in the mechanic arts. Great eras have been marked in human history by the invention of the printing press, the steam-engine, the power-loom, the railroad, the telegraph, and other cognate enterprises, and their influence very justly appreciated and acknowledged. The inventive genius of mankind has, until the present century, been chiefly directed to the service of manufactures and commerce, leaving the kindred and more vitally important employment of agriculture entirely out of view. "The two women grinding at the mill" have both long since been taken away, and water and steam, with their resistless power, made to perform work that would defy in each instance the united muscles of thousands of men.—The gossamer tissue of the silk-worm is handled by an iron-fingered engine with all the delicacy of the most sensitive nerves; and the manipulation of all the arts have, by the triumphs of human genius, been turned over to the perfect workings of the automaton machines. All this had been going on for centuries, while, in agriculture, the chief processes were still confined to the operation of human hands. It is true a gradual improvement took place in the models of agricultural implements, and in the materials of which they were constructed; but these changes were forced upon the community by the advancement of the mechanic arts generally, rather than produced by a bold and initiatory step in the agricultural department itself. They were the reflections of a borrowed light emanating from other departments of human industry, rather than a lumination of its own.

The farmers, in the early part of the nineteenth century, still used a plow scarcely better in its model than that used by the ancient Romans, and cattle were not unfrequently employed in treading out the grain. Small inducement was held out to the skillful mechanic to engage as a laborer in agriculture or anything connected with it. Stalwart limbs and insensibility to fatigue were the chief requisites of a farm laborer, and even these were paid for in the usual niggardly way that brute force only is rewarded. Twelve dollars a month was given for the ser-

vices of a farm hand, while a good mechanic at any other employment would obtain thrice that sum. A man that had mechanical skill sufficient to whittle out a cider-tap, make a wooden linchpin, and turn a grindstone, would do very well for a farm hand, provided he was physically endued with the power to work and possessed the will to do it. Perhaps there was no business that required so little exercise of the intellectual faculties as farming under the old regime. Plow and sow in the spring, harvest in the summer and autumn, and thresh in the winter, about covered the ground of necessary knowledge.

All these things have undergone a change within a few years. The best hand now employed upon a farm is not the man who can cut the neatest swarth or thresh out the most grain with a flail. Farm machinery is working a wonderful revolution in agricultural processes, and is doing much of the work better and much more rapidly than it was executed by the old hand process. We remember an old farmer who prided himself upon the splendid manner in which he broadcast his seed wheat, and he would point to the green field in the fall after the grain was up, proudly contrasting it with his neighbor's streaked ground. But at length that neighbor purchased a grain drill, and the comparison thenceforth was decidedly in his favor. The old farmer could never speak complacently of a grain drill afterwards, declaring it would ruin all skill in sowing, and enable a mere clodhopper to scatter seed equal to the best wheat-grower in the world.

Who would think at the present day of falling back upon the flail to do the threshing of our grain? And yet, the writer remembers to have heard it gravely argued that a threshing machine was a miserable invention, and vastly inferior to the flail; that it was far better for a farmer to hire a couple of men two or three months in the winter to thresh out his wheat than to have it done by a machine in as many days. "It spoiled the straw," it was said; "the cattle would not eat it half as well as they would that thrown out day by day as threshed by a flail;" with other arguments equally as cogent, and which would now be regarded at least as evidences of partial insanity.

The gang-plow, the wheel-cultivator, the hoe-rake, the corn-sheller, and, above all, the mower and the reaper, are additional illustrations of the revolution that is going on in the agricultural departments of human industry, brought about by the direct application of scientific knowledge and inventive genius in the substitution of machinery for manual labor.

All of our energetic agriculturists are adopting machinery more or less, as their surplus means will admit; and the lively rattle of the mower and the reaper will very soon be heard in innumerable fields that never before, in gathering the harvest, felt any-

thing but the slow-paced movement of the cradler. This intelligent desire on the part of the farmers to do their work by machinery instead of human muscle, has, within a few years, built up large establishments where agricultural implements are made. They rival, in many instances, the machine-shops of manufactories and railroads, and employ great numbers of men. The prominent objects in an agricultural warehouse are no longer the plow, the rake, and the scythe, although these are by no means dispensed with. The mower, the reaper, the drill, and other kindred instruments, now occupy the foreground, and the farmer, well to do in the world, pays as many dollars for a machine to do his work as formerly for the simpler instruments he paid cents.— But the difference is more than compensated by the rapidity and certainty with which the work is executed, and the reduced number of hands employed. A few men in the harvest-field at two dollars a day very soon absorb the entire cost of a reaper.

In view of the change which is taking place in the processes of agriculture, it behooves our farmers, especially the young, to educate themselves with some reference to these points. No human knowledge ever came amiss, and we never heard of a man, farmer or otherwise, who knew too much, although there are very many familiar instances of individuals placing too high an estimate upon their own abilities. A thorough knowledge of Natural Philosophy, especially in the department of mechanics, is of the highest importance to the farmer; for in many of the implements, as much skill is requisite to use them successfully as to use an ordinary steam-engine. The time is not far distant, if indeed it is not to-day, when good mechanical abilities will be as much needed in agriculture as in the trades, and will be as amply rewarded.

THE ROLLER AND ITS ADVANTAGES.

THERE is no agricultural implement so seldom met with in this country, perhaps, as the roller; and yet it is one of the most useful of utensils. Where your ground is soft and loamy, if you have not time to pick up the stones upon it, you can roll them in, and produce, at little expense, a smooth and clean surface, rendering your fields free from hummocks, and fitting them for plowing and mowing. And it has been mentioned by some that the roller is a useful implement upon ground in which the frost has heaved out the grass and clover roots. It may possess an advantage in this respect, and no doubt would be a fine thing to level and press down damp land where clover is sown, and would be likely to heave.

The roller which we would recommend for general advantage, is made with two separate rollers, each

one being four or four and a half feet in length, with strong iron bands around their ends to prevent splitting, and a good wooden or iron shaft running directly through them, to which is attached a framework, etc. The rollers can be made out of large hollow elm logs, or of separate pieces put together. A good, straight, hollow log, is, however, preferable, particularly if the outside of it is sound. You can work it down to your liking, and put strong cross-arms in the ends of the roller, through the centre of which the roller should run. Some farmers, we believe, use iron rollers, but probably on the whole wooden ones are better, so they can be made large without incurring much expense.

The roller is an admirable implement to pass over barley ground after harrowing it, or even after you have drilled in the barley; for when the grain ripens, if you do, you possess the advantage of cutting it low to the ground, and in this way secure a greater amount of straw, not to mention the clean surface which close mowing makes, thus leaving your barley lot in the finest condition to plow. We invariably roll our barley ground; we think it pays in three or four ways: first, the small stones are rolled into the ground out of the way, so that they will not dull scythes; second, you can rake up your barley with a horse-rake, and not run the risk of collecting stones in the winrows to be ultimately threshed; third, you create a smooth surface, either for plowing or mowing; and fourth, you get more straw, and make your work look better, where the field is rolled than where it is not.

We therefore recommend double rollers. Roll down your grass, and barley, and wheat lands;—save money and labor in picking up stones; and, in a word, make your lots appear smooth and handsome by using an implement which is both cheap and simple.—*Plow, Loom, and Aerial.*

ON MILKING COWS.

"I HAVE heard lately a conversation about milking cows, which causes me to ask some information on the subject of you. If you think it of importance enough to occupy a place in your periodical, please reply to it through the Farmer. I wish to know whether it would make cows better milkers to milk them regularly three times a day. In the conversation referred to, it was contended that it would. In reply, it was contended that whilst it was necessary in some cases to milk cows three times a day, that it could not be best as a general thing, or it would have been adopted in this utilitarian age. I want you to give us the philosophy of the matter, if you please. A. C."

There is no doubt, we think, that cows give more milk for being milked three times instead of twice a day. The fact has been frequently tested by experiment. So a cow milked once a day will give less than if milked twice, and may be "dried off" by lengthening the period between the times of milking. Frequency and regularity are required to get the *maximum* of which a cow is capable.—Why three times a day is not the rule, is not that there would not be a larger flow of milk, but because ordinarily the increase would be counterbalanced by the trouble. To bring a cow from a distant pasture on a hot summer's day, for the purpose, would probably not be advisable, but when she is readily at hand, it would be otherwise.

As to the philosophy of the matter, it is the universal law of supply answering to demand. In the spiritual world, "he that seeketh findeth," in the natural it is not otherwise. And in both, the supply is proportioned to the urgency of the demand. The mother offers a full breast to her suckling, and as long as his necessities compel him to "seek" his food there, the fountain never fails.—When he begins to munch his crust, and by degrees seeks less diligently his nourishment there, the supply gradually falls off, and finally ceases with the demand. There is "philosophy" in milking cows as "there is reason in roasting eggs."

American Farmer.

From the Argus.

TO CURE THE BITE OF A SNAKE.

ST. PAUL'S ROBESON Co., MAY 27, 1856.

MR. EDITOR:—Knowing it from experience, having been bit by a Rattle Snake, I immediately procured some Cherry tree bark and some Red Oak do., with the roots of a Holly tree, making a tea of the above; bathing the wound with it while having a poultice made of the roots and barks mixed with meal to make it stick together, binding up the wound with the poultice and finding immediate relief. It is also good for drawing the poison from the bite of a Spider. The tea keeps the poison from extending through the body, and the poultice draws it out.

J. W. B.

PRACTICAL and scientific farming should go hand in-hand: science without practice, is unavailable; practice without science, is the quality of the brute. While science without practice will not produce a blade of grass, every acre will produce more under the culture of a practical hand guided by a scientific head.

THE CULTURE OF SHORT STAPLE COTTON.

BY THE EDITOR.

OUR journal would not present a true reflex of the most important interest in the State, if we did not incorporate in its pages a few practical hints upon the proper culture of cotton, its greatest staple. The philosophy of its effects upon the civilization of the globe, its influence upon the social destiny of our people, and the policy to be pursued in its extended production, we will leave for the present to other pens. We prefer to enlarge upon its economical and proper culture, rather than speculate upon the phenomena of inevitable results, arising from its uses as a medium of commercial influence. We are not vain enough to suppose, that we can enlighten many of our systematic and successful cotton planters, as our experience with the culture of this staple has been limited. In order to avail ourselves of the best information we can command, we give the details furnished by a practical planter, Dr. J. H. BURT of Edgefield, who by the aid of composts and specific manures has made very remunerating crops, under the dry, sandy, pine-land soil of that district. We shall write out his system of culture, from notes taken during a set conversation upon this subject, and though we may not fully and correctly express all his views, we yet hope to incorporate much valuable information and suggestive experience.

Cotton lands should be thoroughly broken, and the soil made loose and mellow. Clay lands should be broken early in the fall or winter, and as much vegetable matter incorporated with the soil as is practicable. Sandy soils should be broken with the bull tongue plow. If the soil is mellow, and in good condition, where lands have been planted in cotton the preceding season, it is not necessary to break them up before bedding, and the beds may be formed in the middle of the last year's row. Beds should never be formed on the old row. There are good reasons for this practice, one of which is, that it will afford the proper nutriment to the plants, under a correct system of manuring, at that period when they require sustaining most. It also enables the plants to withstand the drought, and every year's bedding, by thus alternating the rows, gives a greater depth to the soil. Sandy soils should be prepared with a half shovel plow. Clay lands require the best twisters or turning plows. It is best to leave off the final preparation of cotton land, as late as possible. We thus secure fresh friable soil for the young tender plants to grow in, and the application of manure immediately before planting is the correct and by far the most valuable

plan—the crop receiving more benefit from it at that period, than when it is allowed to be soaked and evaporated by the filtering which invariably occurs on sandy soils. On clay lands retentive of manures, the application of fertilizers, can be safely made at any time, and the disintegration of the stiff soil, by the escape of the gasses, has frequently an ameliorating effect. On sandy soils, keep all vegetable matter near the surface, as it will serve both as a protection against the heat, and will receive absorption from the atmosphere.

Dr. Burt, pursued, in 1854, the following routine of manuring. He used chemical manures, consisting of two-thirds Kettlewell's compound No. 1, and one-third Peruvian Guano, mixed at the rate of one hundred pounds per acre, with the addition of a small quantity of gypsum. This was applied to dry, sandy soil, on which he had scattered in the drill, all the rough manure made on the plantation, which consisted of a large quantity of vegetable matter, slightly decomposed, as compost, incorporated with animal manures. This vegetable matter acted both as an absorbent of the volatile elements of the guano, and the guano in turn acted as a solvent of the same vegetable matter—having thus, a two-fold beneficial effect on the growing crop. It also retains moisture more readily than where it is not applied, and corrects the tendency to rust, invariably promoted on thin soils deficient in vegetable matter, by the application of highly stimulating mineral manures.

The proper and regular distribution of manure is the most important item of work. It should be so nicely and minutely distributed, that not the least discernable difference could be detected in the after growth of the crop. The injurious results from the irregular application of manures, must be obvious to all. Some rows receiving too much, are over stimulated into unprofitable growth of weed, whilst others not receiving a sufficiency, suffer correspondingly from a lack of fertilizing matter, and both portions are thus ultimately injured and the average crop falls far short, from what it might have been if the proper system of application and care had been preserved, and carried out. The constant and personal attention of the manager, alone, can secure the proper and equal distribution of manures, and his eye should be upon every row, and every part of the field—for it is needed, as there is no gang of hands in the cotton States, who can be made to properly understand the different requirements of different varieties of soil. Never put too much vegetable matter in the drill on one particular portion, but

let it rather be widely and generally distributed over the whole crop, rather than have an overdose, or more than a sufficiency, on a smaller portion of the farm. Frequently during dry spells, when too much vegetable matter in a rough state is placed in the drill, it expands in body, is detrimental in its effects, and not allowing the roots of the plant to penetrate it soon dies. If we have more than a sufficiency for this purpose, it would be wise to apply it broadcast over those portions of the fields destitute of vegetable matter. The cotton plant requires vegetable matter in abundance, and on all lands after this is exhausted, it should be supplied either by litter from the woods decomposed by trampling in cattle yards, or by the subversion of a heavy coat of pea vines. All stubble lands could be made produce this crop in time to subvert it for the succeeding cotton crop.

In bedding up lands for cotton, the proper elevation of the bed should depend on the particular character of the soil. On dry permeable soils, easily penetrated by rain, or atmospheric influence, and not suffering from a wet or retentive sub-soil, the beds should be made flat and low, whilst on stiff clays and such low lands as evidence a super-abundance of moisture uncongenial to the healthy habit of the cotton plant, the beds should be sufficiently elevated to counteract all such injurious influences. The proper distances at which the rows should be laid off, should in like manner be varied according to the strength of the soil cultivated, and the discretion and good judgment of the manager in this particular should be made evident. A good rule is to lay off the rows in ordinary soils so close that two furrows of the scraper or sweep used, will completely clear them out.—On richer soils, of course they must be made wider, and then additional furrows must be run in order to keep the crop clean. We prefer narrow rows and giving proper distances in the drill, so that each plant may have its own legitimate area of feeding ground for the extension of its roots, to wider rows and crowding in the drill.

On thin soils, the plants growing any way smaller, and the branches not interfering with those of the adjoining plant, in order to secure a sufficient crop of bolls, plant close every way, and therefore, as every planter knows, the size to which the cotton plant attains at maturity on the soil cultivated, it should be planted and thinned to such distances, that when the growth is completed, the cotton stalks should touch both in the drills and in the rows. When the crop at maturity covers the entire surface of the ground, he may be sure that he

has acquired the most perfect growth, which his soil will produce, and which is compatible with its highest production.

Dr. Burt advocates late planting on light sandy soils—dry stiff soils should be planted earlier. A reason given for planting late on sandy soils is the vigorous character the plant assumes immediately after coming up, which enables us to work it with facility, and we thus kill the first crop of grass which springs up with the cotton. By late planting, beds which have been formed some time, and in fact all lands, are thoroughly cleared of the young grass and weeds. Early planting characterized by short stems and “buttoning” upon the ground, is very difficult to clean from the grass which gets an even start with it.

The planting should be performed in the best possible style (Byrds' implements are the best,) and having secured a good stand, commence, as soon as the crop is fully up, to bar off the beds with the sweep, or Mississippi scraper. Here let us remark, once for all, that the entire cultivation of the cotton plant should be superficial. The cotton plant is orbicular, and has always as great an extent of roots as it has branches. The most certain causes of failure is its irregular growth, which is sure to be induced by deep culture, and the irregularity of the seasons. When the cultivation is superficial, the roots are never disturbed, and the growth of the plant is steadier but slower. There is no extra succulence, and a woody character with short-jointed limbs, congenial to fruitfulness, always follows shallow culture, whilst the plant is not so liable to cast its fruit from the fluctuations of the seasons. On the other hand, any deep plowing, unless the seasons are extremely favorable, produces a stand-still in the growth of the plant, which continues until the rains again start it. As soon as it rains, the plant shoots up rapidly, and is filled with super-abundant sap, whilst nature, to relieve herself, casts off the forms and young bolls, and as often as the crop is subjected to this culture, the same results will follow, and the land will be burthened with immense weed, grown at the expense of the fruit, which has thus been sacrificed. So marked is this irregular growth, or habit of fits and starts, that in many instances we can find out the precise number of improper workings the crop has received, as well as clearly designate the exact range of the fluctuations from wet to dry seasons, by enlargements on the stalk, marking the height of the plant, at the exact period of each plowing.

In using the scraper or sweep, put the most skillful plowmen, with the slowest mules, at the work of running round. It diminishes immensely the labor of the hoe-hands, who follow, to have the work done in the best style. A fast horse, by his irregular gait, causes the sweep frequently to cover up the young plants, and it is most difficult to keep your implement at the proper gauge to ensure good work, both as to depth and distance from the drill. "Slow and sure" amongst the sweeps should be the motto at this stage of cultivation, for grass destroyed in its early growth is gone forever. If the crop is ever irretrievably injured by grass, it is just at this stage of its growth, and nine times out of ten it is this grass which is left at the first working which does the deed. The keen, thin, steel blades of the hoes should be most incessantly plied, chopping through the width of the hoe, and leaving three or four plants in the bunches. In chopping through, in fair and favorable weather, it is preferable on sandy soils, not to pull the chop through entirely, but to slide the hoe back, and let the encised plants and earth fall back in nearly their original position. This does not expose the manure, and prevents the early coming up of all those grass seeds, which, lying too deep to sprout, and being exposed by the chop when it is pulled off the ridge, immediately spring up. This mode does not detract from the facility with which the operation is effected—but with proper slight handily acquired, is easier work.—Particular and close attention is required during the thinning season, for without this, the stand is sacrificed and the main chance for success depends, as much on a good stand as on all other things. Let the sweeps follow immediately after the hoes, and all grass not observed will receive its quietus. After the crop is chopped through, which must be done as rapidly as possible, so that no portion of it suffers from overcrowding which has a tendency to spindle the plants, it should be immediately worked over, and thinned to a proper stand. The hoes should precede or follow the sweeps, as the situation of the crop may seem to indicate; but we should prefer the hoes to go first, in order to eradicate thoroughly all the grass. By raising the right wing of the sweep at this stage of the crop, a sufficient quantity of soil can be thrown to the plants. We consider dirting up cotton with the hoe as a waste of labor, and frequently injurious to its growth, impairing it by interfering with its roots. It is not necessary to plow out the middles entirely until this working, provided they are not becoming too grassy. At

this work, put your fastest mules, as it can be rapidly done without injury to the crop. As often as practicable keep the crust of the land broken.—Do this invariably after rains, and with the sweep alone. The hoe-hands should frequently walk over the fields, and chop out the grass; but this should not be regarded in the light of a working. All late workings should be as superficial as possible, and if the land is properly broken up, properly planted, a good stand secured, the proper elements furnished for the production of the plant and its fruit, and the field kept clean of grass and weeds, no one need despair of making a good crop of cotton. To this we may remark, which is also obvious to sensible men, that in addition we must have the benefit of good seasons, and that the cultivation must, in some measure be modified according to the particular requirements of these seasons. A deep plowing in mid-summer, after long-continued rains, is always ruinous to this crop; but merely breaking of the superficial crust, invariably acts beneficially, and should be done as speedily as possible after the soil is in proper condition to introduce the sweeps or scrapers. Never put a plow of any kind into the cotton field, in order to force ahead work when the soil is so wet as to run together, but use wisdom, and wait until the new turned furrow remains light and porous, for this is the only condition of the soil which is conducive to healthy and profitable vegetable growth. Dr. Burt grew and cultivated a crop upon these principles in 1854, which yielded him seven and a half bales of four hundred pounds to the hand. In 1855 he manured with Kettlewell's compound, No. 1, and Mexican guano, half and half of this mixture, and applied one hundred pounds to the acre. This crop yielded seven and three-fourth bales to the hand, averaging four hundred pounds to the bale. In 1855 he also tried an experiment of one hundred pounds of Mexican guano, with five or six bushels of cotton seed to the acre, with about the same results.

Here, planters of South Carolina, are the results of careful and systematic culture on poor and almost barren soil, remunerating a planter in a most satisfactory manner. Will not those experiments stimulate you to a proper preparation of your soil; and when that is done, will you not strive to incorporate into that soil elements for the production of a paying crop? It would add much to the prosperity of the State if all the breadth of land which is planted in cotton, were as systematically managed.—*South Carolina Agriculturist.*

THE USE OF BONES AS A MANURE.

By BEE.

THE mode of cultivation in the Southern Atlantic States has been well calculated to exhaust the soil of their phosphates, and thus make the application of bones as a manure a matter of general interest to your readers. By the phosphates, I mean the union of phosphoric acid with potash, soda or lime.

As introductory to what I have to say, I will give a table which represents the substances which compose the bone of a sheep (the ileum,) as taken from an analysis made by Dr. Thompson, and referred to by Johnston, in his *Agricultural Chemistry*, page 447.

Organic, or combustible matter,	43.3
Phosphate of Lime,	50.6
Carbonate of Lime,	4.5
Magnesia,	0.9
Soda,	0.3
Potash,	0.2
	—
	99.8

Which table shows, that of every hundred pounds in its material state, fifty pounds and six-tenths of another pound are composed of phosphate of lime.

It is not, however, my intention to go into details of the composition of bones, or dwell upon the history of their uses as a manure. Their uses and very great benefits in English husbandry, are well known to all conversant with the progress of agriculture in that country, and the demand has been greater than the supply since their first introduction about the year 1766, by Anthony St. Ledger. My object is to give two of the most approved modes of preparing bones to be applied to the land, and, in doing this, I know I will best serve your readers by giving the opinions and directions of those whose reputation and merits will no doubt command respect and attention. The able and experienced editor of the *American Farmer*, speaking in reference to this subject, uses the following language:

"We know of no manure that we would so soon rely upon as a lasting improver of the soil, when used in compost with ashes, salt and mould, or when mixed with and left in heap for two or three weeks, with about one-fourth the usual quantities of barn yard manure. If prompt action rather than permanent effect be desired, which should

not be the case, the mode of producing this effect is to reduce them to a pulp with dilute sulphuric acid, and then mixing them to dryness with ashes and mould.

In regard to the manner of preparing and using bones, we will add to that which has been said the remark of Stephens, in his *Farmer's Guide*:

"Of late it has been deemed better to use bone-dust in combination with sulphuric acid, or rather the oil of vitriol, as sold in the shops, than by itself, or with farm-yard dung. The effect of the action of the acid on the bones is to reduce them to a pulpy mass, which is made in this manner:

"Mix a given quantity of vitriol with twice its bulk of water, in any convenient vessel, when the mixture will evolve a considerable degree of heat. Put into a large tub or trough double the weight of the bone dust as of acid used, and pour the mixture of acid and water gradually, and by times over it. An action will soon be observed arising from the escape of carbonic acid gas, and in time, in stirring, the bone-dust will be entirely dissolved and form a mass with the acid and water. The mass may be dried with riddled saw-dust, dry ashes, or fine, dry vegetable mould, and the granulated powder thus prepared may be sown either by itself, or in combination with farm-yard dung. * * * Uncrushed bones will answer the purpose as well as crushed, but the acid will take much longer time to act upon them."

In the above extracts it has been the writer's object to present information of a highly important character to the farmer, and in as plain language and in as few words as he has been able to command.—*South Carolina Agriculturist*.

POLL EVIL IN HORSES.—For the benefit of those who have or may hereafter have horses that have poll evil or fistula, I would say, don't sell the animal for a trifle, or give him away; but cure him sound and well. I care not how long it has been running, it can be cured with one dime; yes, one dime's worth of muriatic acid will cure the worst case of old poll evil. First, wash the sore well with strong soap suds, then drop eight or ten drops of the acid in it twice a day, until it has the appearance of a fresh wound; after which, it should be washed clean with suds made from castile soap, and left to heal, which it will quickly do if the acid has been used long enough; but if it does not get well, apply the acid again until it does cure, for it is a sure remedy, and will not fail if it is applied until the diseased flesh is all burnt out.

Prairie Farmer.

SOILING CROPS—BARLEY, MILLET, DURRA CORN, &c.

BY THE EDITOR.

WE have received a number of enquiries relative to soiling crops. We are gratified at the interest manifested in this branch of economy. The production of the best and cheapest food for domestic animals, should be the main object of the man who wishes to see farm stock always in good condition. Cotton planting is so seductive and remunerating, that it is difficult to allow the breadth of land and amount of labor required to furnish the over quantity of food which circumstances sometimes require. Last season was one of bounty, but the excessive and long-continued cold weather has cleaned out most of the barn-lofts and shuck-pens in the State. Green pastures—the secondary reliance of the good planter—for early grazing, have not been worth the seed sown, and, added to this deficiency, the natural pastures are correspondingly backward. Plantation stock fed on dry food, crave green food, and, as it is a natural requirement, it should be furnished to them in bountiful quantities. Some persons will tell you, that all cultivated green crops are of small value; others will object to the scouring effects on animals, when fed on such productions; and not a few turn up their noses disdainfully at anything else but “corn and fodder.” It is not our province to differ with them, but to give enquirers for “soiling crops” our opinion as to their value.

BARLEY, sown on finely prepared upland, made thoroughly rich, when large enough for the scythe, furnishes a great amount of the very best food, early in the spring, for all kinds of farm stock.—It can be fed, safely and profitably, until the beards harden. There is no portion of South Carolina in which barley cannot be profitably grown, both as a field and soiling crop. The land should always be made sufficiently rich to bear a seeding of three bushels to the acre, and the common four rowed variety is the best. The new Japan varieties promise, however, to be finely adapted to the Southern States.

INDIAN MILLET, EGYPTIAN MILLET (*Pennisetum typhoides*).—We have long cultivated this grass, and, for soiling, have found it to produce more than any other crop for similar purposes. If it is never interfered with, it grows fifteen feet high on rich soil. We plant it on well-manured and prepared lands, on beds about thirty inches apart.—The planting and cultivation is similar to that of cotton, remarking that whatever portion is cut over

must be carefully worked as soon as practicable to give the excised plants a new start. The portion intended for seed should never be cut, but should be cultivated until the crop is large enough to smother the grass and weeds. We have frequently found our millet patches failing in July and August—sometimes from the cultivation having been neglected, and frequently from exhaustion of the soil, in over-taxing its productive forces by frequent cuttings. A slight dressing of any portable manure (guano is best) with thorough working and seasonable showers, will renovate it in a few days, and it will continue productive until frost. It can be cut every three weeks—taking care, as the season advances, to cut it higher from the ground at each cutting. After August, millet is not valuable to the planter, for then natural grasses are abundant; but this hint of renovation may be important to the village and town resident, who has to rely on a small plat of ground to furnish a supply of green food for his milch stock and horses. The scouring effects of succulent food, so often complained of, can be remedied by never feeding until the millet or other grass is withered, or allowed to lie in a heap in the house twenty-four hours after it is cut, and giving a liberal allowance of salt. One peck of well-cleaned millet seed will plant an acre.

DURRA CORN (*Andropogon Sorghum*, *Doora*, *Jowaree*, or *Jonda*.) is cultivated similarly to Egyptian Millet, but will flourish on moderately damp soil. It is rich in saccharine matter, but the stalks soon become so hard, from the abundance of silex which they contain, that horses and cattle reject all but the blades. At this stage it is, however, most valuable, and the rejected portions are greedily devoured by hogs. It is the very best soiling food for hogs, and, in this relation, is indispensable to the planter who wishes to raise his pork cheaply, as it stops the drain upon the corn-crib, and relieves the tight pinch, between the run of the stubble and the admission into the pea-fields. A few acres well-cultivated will fatten a large amount of stock of all kinds, if they are turned on it just at that period when the seed begins to ripen. The mules and cattle devour the blades, seed and immature stalks, and the hogs following, chew up the stalks, and exhausting all the sweetness, leave eight or ten inches of vegetable matter, and their manure, to be turned under by large plows, fitting the land for wheat in November, and with this rotation rapidly improves it.

WHITE TIMBUCTOO DURRA (*Andropogon Sorghum Alba*.)—This is a rare variety of the above.

the grains of which are perfectly white. It is used for culinary purposes in various ways. It is equally productive as the common variety, and as valuable for stock.

CHINESE SUGAR CANE (*Andropogon Sacharatus* or *Shaloo*, *Sorghum Sucre*).—This is a new variety of great value and promise, recently introduced into France and China. Its growth is similar to the Durra corn, with the difference that the head assumes more the shape of the common broom corn, and the seeds are black. It is the richest of all the *graminæ* in saccharine matter. We have seen syrup, finely crystalized sugar and vinegar, made from its juice. It closely resembles sugar cane in taste, and will no doubt, at some future day, furnish material for the production of sugar and alcohol, in those regions where the true sugar cane will not grow. It will be more valuable than Durra corn on the plantation, as it is richer in saccharine matter, and its general introduction as a soiling crop will be highly beneficial.

There are several other varieties of Sorghum, all belonging to the same great family, originating on the rich alluvial plains of the tropical East, and all well suited to Southern cultivation, which are destined to be important auxiliaries to the planter. These crops are great exhausters of fertility, when cut and carried entirely off the soil. Objections are freely urged against their cultivation on this score. Whatever is taken from the soil, if fed to domestic animals, and the manure properly preserved and economised, is of benefit; and in this light enormous crops, highly exhausting in their character, ultimately pay better than their less greedy rivals, which produce but little.

INDIAN CORN, sown broadcast, or thickly in drills, cut and fed at the period when the tassel is fully developed, is preferred by many to all other green food. Our usual custom is to fatten our mules on the green tops and stalks which have small shoots not well filled, cut after the corn is sufficiently hard not to be injured, and we think it pays us better than to allow them to dry up, as we can go over but a few acres before they are out of season, and worthless.

There are other crops valuable as soiling products, but being perennial in their nature, do not come strictly under the subject-matter of this article. Of these, we may mention Lucerne (*Medicago Sativa*), Common Red Clover (*Trifolium pratense*), and the Seedless Panicle Millet (*Sorghum Halapense*), the twin sister of which is so much reviled as the Means grass.

All these furnish a large amount of food, and can be profitably cultivated in various sections of the State. On the dry arid sand hills, the Lucerne finds congenial soil, and on all the stiff, red clays, the Red Clover, stimulated by the application of a small quantity of plaster and lime, will produce enormous crops.

A parting word, dear reader, in favor of bountiful soiling, and we will be done. Let no antiquated opposition prevent you from giving all domestic animals that will eat green food, as much as they can devour, in its proper season, and our reason for the advice is the fact, that it is a requirement of nature that they should thus be furnished. The animal economy will not only suffer, but deterioration in quality and constitution will rapidly ensue if this requirement is not strictly attended to.

Since writing the above, we have received the following information respecting Durra corn, from "Littleton," which we append:

In 1842, Mr. Russell, of Columbia, gave me a new kind of grain, which he called "Multiplying corn," and said it was valuable for poultry, for whose benefit I planted the seed. But two grains came up, from which I gathered eleven heads or ears. I continued to grow this corn for the above purpose alone, until 1848, when the late Col J. Davis, of Fairfield district, informed me it was good for hogs and milch cows, but said he preferred another kind I had, viz:—Guinea corn. The next season it was planted upon a little larger scale, and enough cut to keep two cows for nearly three months, taking care to cut the stock, blades and ears fine, to prevent them from choking.—Mrs. ——— thought she got more and richer milk, than when fed upon hay, cotton seed and a few peas. I do not know as to that, but I do know that my horses would never quit Multiplying corn for any other food put into their troughs. In 1850 I noticed, as I thought, an extravagant account of the yield, &c., of Durra corn, or Indian Millet, by a Mr. Anderson. A few lines, requesting some of the seed, were sent the editor of the *Southern Cultivator*, and when they arrived I recognized my old acquaintance under a new name. Since that time several articles have appeared in the agricultural papers of the day, and it is now called *Doura*.

Several gentlemen in this vicinity have planted it for a few years, and almost every one of them enlarges his "patch" yearly. I think the best acre upon every man's farm should be planted with Doura, and until something better can be had, I will continue to plant it for hogs, horses and cows.

If planted about the time the cotton crop is usually planted (worked in the same way the first time, afterwards like corn,) it will come in just at the time the farmer needs something to give his hogs intended for slaughter. Cut a foot or two from the ground just as the ear commences ripening, and feed stock, blades and ears; give a plowing to the stumps, and if it be seasonable, a half crop may be expected by frost.

I usually plant in rows from four to five feet apart, and thin out to from eighteen inches to two feet. This, however, must depend upon the strength of the land. I have had flour made from the grain. It eats pretty well in batter-cakes, but is rather darker, and I think every way inferior to wheat flour. I have, also, made syrup from the stocks. It is a most excellent diet for stock and poultry. There are some who object to it as an exhauster; it will impoverish land without the aid of manure, but so will cotton, oats and corn; and in this old, worn-out State of ours, we must help our mother earth to feed our dependants, plant or sow what we may. In conclusion I may add, a second crop may be planted 1st May, or even later, from which it would be better to save seed. The weevil must be kept from it. I know of no better way than to treat it as seed wheat.—*South Carolina Agriculturist.*

GOOSEBERRY MILDEW.—It is well known that mildew is so destructive to gooseberries in this country, that but few of the large and choice kinds ever perfect much of their fruit, and as a consequence, one of the nicest of fruits is but little seen in our market, in a ripe state. The writer of the Calendar for the Horticulturist, gives a very simple remedy, which if as good as represented, is well worthy of extensive application. The following is the remedy, and as we read it, merely requires the application once, "when the fruit is forming:"

Mildew may be prevented, by watering with soap suds, over the branches. A radical cure for this pest may be formed by mixing a peck of lime and a pound of sulphur, in ten gallons of water; let it stand and settle. A pint, in 4 gallons water, syringed over the bushes when the fruit is forming, will keep them clean; cover the ground with manure, and spread a small quantity of salt over it, to keep as much moisture as possible about the roots.

Mulching is undoubtedly a good thing, as it keeps the roots in a more uniform state as regards heat and moisture, and salt is recommended by sev-

eral different writers just at this time. Our experience goes to prove that if planted under the shade of trees somewhat, they escape mildew, although the fruit is small. The fine show varieties of England are much more subject to it than the small rough kinds. The Whitesmith and Houghton, are perhaps the safest to plant.—*Country Gentleman.*

HUSSEY'S REAPER.

ONE of these machines was last week put in operation for the first time in this neighborhood, with what gratifying result is shown in the following note from Mr. Norwood. Others who have seen it in operation have expressed their delight at the expedition and completeness of its work.—*Hillsborough Recorder*

From the Hillsborough Recorder.

MR. HEARTT :—I have had one of these machines in operation for some days, and as it is a new thing in these parts, I have supposed some account of it might be acceptable to your readers.

It was purchased at the price of \$110, from Borum & M. Clean, of Norfolk, agents of the proprietor.

I have cut with it about fifty acres of ground, all free from stumps and rocks or other obstructions, the wheat ranges from five to twenty-five bushels to the acre. Some of the land was very smooth and nice, having been both harrowed and rolled; other portions of it had been harrowed only; and another portion of flat land, where the wheat had been ploughed in, was very rough, and had besides drain furrows running through it, at fifteen feet apart, formed by running a large two horse plough twice in a furrow, these the reaper had to cross.

I put two strong horses to the machine, changing them every two hours; and over rough ground and smooth, up hill and down hill, through thick wheat and thin, it performed its work perfectly, not leaving a spear of wheat standing. And so well does the raker lay it for binders, that nothing need be lost, except through the carelessness of the binder.

According to the number and speed of horses, the size of the field and the stand of wheat, it will keep from six to fifteen binders at work.

The machinery is strong and simple, and requires little skill in its management. My black people were instructed in its use from the printed directions, and saw it managed by a young Law-

yer the first day, and ever since they have had it to themselves without accident.

A number of persons, including some of our best farmers, have seen the machine at work, and were all delighted with it.

So far as I am concerned, the occupation of the cradle maker is gone, and the little pig must *root or die*, for his *gleaning* is ended.

J. W. NORWOOD.

June 24, 1856.

OPINIONS REGARDING THE CAUSE OF CHOLERA.

JOHN LEA, of Cineinnati, author of the Geological Theory of Cholera, recently published an article in the Cineinnati Gazette, addressed to us, in which he adheres to his opinion that cholera shuns all primitive formations where no calcario magnesian water is to be found. He asserts that if people died of cholera in New York in 1854, "They must have subjected themselves to the disease by the use of hard water, or doses of magnesia." He also says: "I have never yet known a single individual to die of cholera who used rain water exclusively. I believe that not one has died who used water that had been boiled, and the cholera generating impurities precipitated." He asserts that the use of rain water is a preventive of this disease, and that it is neither looked for nor feared in southern cities, villages, and on plantations, where such water is exclusively used as a beverage. If this is so, cholera need be no cause of terror in any place; and, we admit, it is not of so much consequence to know what causes the disease as to know how to prevent it. We have no positive data, however, on which to place implicit reliance for such opinions. He is, undoubtedly, mistaken in regarding the use of hard water and doses of magnesia as being the cause of so much cholera in 1854, in New York. The water with which this city is supplied contains only 2.8 grains of carbonate of lime and magnesia to the gallon—thus it may be called soft water. If cholera were a geological disease, belonging to the limestone-magnesium formations, it's certainly strange that before the introduction of Croton water, when New York was furnished for a long period with water containing 128 grains of limestone and magnesian impurities to the gallon, cholera was unknown. During the prevalence of cholera in August, 1854, from 600 to 1,000 persons were carried off by it weekly. We are not so credulous as to attribute such mortality to large doses of magne-

sia taken by those persons,—Croton water having its source in the primitive formations of gneiss and mica.

Impure water, no doubt, causes and contributes to disease, but this is mostly owing to the organic matter, and not the lime or magnesia it contains. This was found to be the case in London during the prevalence of the cholera in 1848-9. One district in that city was supplied by two river water companies—one company supplying 25,000 houses and the other 40,000. The mortality was only 37 in 10,000 of the population supplied by one company, while it was no less than 130 in the same amount of population supplied by the other. This difference of mortality was unmistakably traced to the water, not, however, to any excess of lime or magnesia in the one over the other; but organic matter. This is the opinion of the most eminent physicians in London, as expressed by them in a conversation which took place in the Society of Arts only so recent as the 14th of last month, in discussing Dr. Clarke's method of purifying water by the use of hydrate of lime. There are so many facts before us which seem to contradict the geological theory of this disease adopted by Mr. Lea that we cannot accept it.

We are not prepared to deny that the use of rain or boiled water is a sure preventive of this disease, as Mr. Lea asserts. If this is so, we heartily rejoice that the remedy is so simple. But we must have more facts (we really hope we may obtain them) to endorse this theory before we can place implicit reliance in it.—*Scientific American*.

STATE SHOWS, 1856.

American Pomological Society, at Rochester,	Sept.	24
Canada East, at Three Rivers,	Sept.	16, 17, 18
Canada West, at Kingston,	Sept. 23,	24, 25, 26
Georgia, at Atlanta,	Oct. 20, 21, 22, 23	
Illinois, at Alton,	Sept. 30, & Oct. 1,	2, 3
Indiana, at Indianapolis,	Oct. 20, 21, 22, 23,	24, 25
Maine,	Oct. 28, 29, 30, 31	
Michigan, at Detroit,	Sept. 30, & Oct. 1,	2, 3
New Hampshire,	Oct.	8, 9, 10
New Jersey, at Newark,	Sept.	10, 11, 12
New York, at Watertown,	Sept. 30, & Oct. 1,	2, 3
North Carolina, at Raleigh,	Oct. 14, 15, 16, 17	
Ohio, at Cleveland,	Sept. 23, 24, 25, 26	
Pennsylvania, at Pittsburgh,	Sept.	30
South Carolina, at Columbia,	Nov. 11, 12, 13, 14	
United States Agricultural Society, at Philadelphia,	Oct. 7, 8, 9, 10	
Wisconsin, at Milwaukee,	Oct.	8, 9, 10

THE ELEMENTS OF GOOD TILLAGE.

WHEN the reader reflects, that for the greatest production we must have the very best soil, in the best condition, and furnished with a sufficient amount of those constituents which enter into the formation of the plant, he will perceive at a glance what a field for improvement we have, before we can say that our cultivated lands are in a state of good tillage. Take the best lot of virgin soil, abounding with all the elements which sustain a vigorous forest growth, clear it, and subdue its natural wildness by the plowshare, and the very process of culture usually adopted, independent of the exhausting routine of production indulged in, acts detrimentally, and in a few years its tilth is destroyed. It may be light and porous, when first subjected to the plow, but the process of repeated cultivation, by improper elements, with the loss of vegetable matter lessens the bulk of soil, and it becomes hard, dry and non-absorbent, a state entirely uncongenial to the production of crops, and the processes of easy tillage.

Another fruitful cause of change in the texture of soils is, that, as soon as the roots of the trees are destroyed their cavities are filled up by cultivation, and natural drainage is obstructed.

Lands, which were sufficiently dry for all the purposes of cultivation when first cleared, from these causes become too wet, and the stagnant water soon causes the tenacious particles in the soil to run together, forming an underlying hard pan, which can be subdued only by proper under-draining, and in some localities by sub-soiling. Nature so arranges all her requirements, that there is always a perfect and congenial adaptation of soil to the particular plant and locality which is to produce it, and from this cause the productions of the earth, in a completely natural state, are always perfect. The swamps and the valleys, the hills and the mountains, each have families of trees and plants adapted to the productive elements which their soils contain, as well as to the particular state of dampness or aridity which may obtain. Those productions which delight in aridity are never found in damp and inundated locations, and *vice versa* with aquatic plants.

These facts from nature, are sufficient to show with clearness, that when man attempts to adapt the soil to the various products grown on cultivated lands, he has much more to do, to render this operation perfect, than is usually effected by the ordinary processes of tillage resorted to. Exhaustion, and its injurious effects upon the aggregate products of a country, so prejudicial to permanent prosperity, is but a secondary subject, compared to the importance of the primary preparation of the soil, and its perfect reclamation from nature, to the requirements incident to the production of artificial crops. If per-

fect preparation is made at the commencement, it requires no lengthened deduction of figures, to show that exhaustion is in a great measure prevented, and a cure is applied before the disease has made its appearance.

The presence of ammonia in rain water, is one of the great elements of fertility, it being furnished in a natural way to the growing crops just when they are in the state most needed. The best locations of natural loam and alluvial deposits absorb and retain this element in large quantities. Hence, the natural fertility of such soils, whilst the great importance of seasonable and frequent showers to the planter, whose soil is deficient in these absorbing and retentive qualities, is made evident, from the same hygroscopic influences. Ordinary plowing in the South, on upland does not bring into use more than three inches in depth of soil. Experiments have been made by Mr. Dalton,* with a cylindrical vessel, ten inches in diameter, three feet deep, filled with gravel, sand and soil—having a discharge pipe at the bottom, by which to measure the quantity of water that ran off, and which gave perfect drainage, the top of the soil being covered with grass, the whole buried so that the top was even with the ground, shows that earth that is moderately moist will take up three inches of water without carrying it beyond the point of saturation. This amount had in the preceding dry month been taken up by the plants and evaporated, and without making the soil too dry, had so drawn upon it, that it could imbibe three inches, which fell in four days.

Mr. Dalton arrived at very satisfactory conclusions respecting the amount of water imbibed by the soil by saturation, and stated that in the spring after the melting of the winter's snows, a cubic foot of this saturated earth is to water in its specific gravity as five to three; dried to moisture suitable for the reception of seed, it loses one-twelfth of its weight; and when perfectly dried it loses one-third. He also argued that when it had lost one-sixth of its weight by drying, it was not too dry to support vegetation. When it had lost two-thirds, it appeared like top soil in summer. Hence, every foot of earth so saturated, contains seven inches of water, and it may part with one half of its water, and not be too dry for supporting vegetation. We start in the spring with this amount of water—say three inches in depth, within one foot of the top of the ground. Roots and plants go down lower than this, if the soil is congenial to their reception.

Common operations of plowing, with good implements, will render porous and permeable ten inches in depth of soil, whilst extraordinary plowing may

*See Geddes' Prize Essay.

reach as low as one foot. Trenching to the depth of three feet would give to the plants cultivated all that is claimed for the above experiments.

When the land is cultivated six inches deep, it only holds subject to the purposes of vegetation, if no account is taken of water rising up through the hard underlying earth, one inch and a half of water. If cultivation goes to the depth of a foot, the available quantity of water is doubled. If the soil is broken up still deeper, though it may be that the roots of most cultivated plants do not penetrate beyond a foot, yet the water from a lower fountain will rise up by capillary attraction, and supply the evaporation from the surface of the soil. So, it results, that while one foot of earth will hold for the purposes of vegetation, three inches of water, three feet will hold so much that it can part, without becoming too dry, with three inches and then receive, in the course of a few days' rain, another three inches, without danger of flooding the soil. Hence these experiments show, that a soil which holds no water for the use of plants, below the depth of six inches will suffer from drought in ten days, in June, July or August, and if the soil is in suitable condition to receive and hold water to the depth of three feet, it would supply, if properly saturated at the commencement, sufficient moisture for the same months. We have practically quoted these experiments to show that a proper preparation of the soil, would in a great measure counteract all the inconveniences which result both from a deficiency and an excess of rain to growing crops. Substantial depth of soil would retain all the moisture which fell, and give it out to the plants, as it was needed. What ammonia was not required by the production of the crop, or subjected to the dissipating laws of evaporation, would also be retained and increased fertility to the soil would be the result.

In rainy seasons, such as when the excessive moisture is ruinous to growing crops, on shallow soils by reason of the imperfect drainage, this moisture is precipitated below the roots of the plants, and its injurious effects not experienced. By depth of soil we cure two disasters most detrimental to growing crops, and at the same time add vastly increased capacity to the soil, for the appropriation of those elements which alone can naturally perpetuate fertility. If we receive benefits from these, how much more are we benefited from other causes? The ease with which the tillage of the crop is carried on, a complete exemption from the washing of the soil, and the vast increase of production are items, not to be regarded in a trivial light. Added to these, the fact that proper tillage would require less land, less capital, and less labor, after the primary preparation, and it is a clear problem that our system of

agricultural operations though seemingly remunerative, must in the end result in disaster and ruin, if persevered in. We have much to say upon this subject, but must defer further reflections to a future day.—*Editor South Carolina Agriculturist.*

ROTATION OF CROPS.

By WEEOKA.

MR. EDITOR: We have often heard the remark that Southern planters were pursuing a suicidal policy, by allowing the cultivation of cotton to monopolize so much of their time and labor. Others again will pertinently inquire, where is the economy of raising so much cotton when you buy bacon, flour, negro clothes, and a great many other articles which might be made at home? Now we think, it involves considerable thought, some philosophy, and no less experience to conclude correctly, whether planters in the cotton growing region of our country should grow cotton exclusively, or equalize the investment between cotton and the cereals or small grain.

We believe, if a man's object is to make money by planting, and he plants with an eye to that result alone, he should rely upon his cotton crop for his income. If, however, the planters object to the pursuit of happiness, the luxury of "living within himself," or the improvement of his plantation, another system should be adopted; and in both cases cotton might legitimately constitute the "big idea" in his crop. Cotton is the only paying crop we can cultivate, and why? Is it because the amount produced per acre is worth more money than any other crop? Not at all, but because it is more readily converted into cash. Cotton always has a market and can at any time be sold for cash; grain cannot. We will suppose the average cotton crop per acre of our State is five hundred pounds of seed cotton, worth twelve dollars; the same lands in corn and peas would average, per acre, ten bushels of corn, \$7.50 two bushels peas, \$1.50 and \$1.50 worth of fodder, making a total per acre of \$10.50; the amount (\$1.50) in favor of the cotton crop would not more than pay for the greater amount of labor required to prepare the cotton, over that required to prepare the grain, for market.

Suppose a single district in our state (Fairfield for instance) should substitute one entire crop of grain for cotton, what would be the result? The world would not feel it of course, but our planters would be the sufferers. Instead of being able to sell their grain at home, they would be required to ship it to market supplied from countries whose staple produce is grain, and where this commodity can be grown cheaper and more abundantly per acre, and consequently could be sold cheaper. What re-

pudiate the principle of sacrificing Carolina's hills for Florida's hammocks, or Louisiana's bayous, solely for the purpose of increasing the capacity of our purses, we by no means condemn those heads of families who emigrate southward and westward to obtain the means of settling their children around them. So, in the cultivation of crops, we are opposed to the monopoly of "King Cotton," though equally averse to the exclusive cultivation of small grain and raising stock. Each deserves our attention, and no one more than the other should receive it.

Our system then is to divide the plantation into three parts, a third for cotton, a third for corn, and the remaining third for oats, wheat, rye or barley and potatoes. As soon as the wheat, oats, and rye are harvested, sow broadcast upon the stubble half bushel peas per acre, plow all in immediately, and in the fall just before frost, bury under with a two-horse plow, vines and peas. The second year put cotton upon this land, corn where cotton grew the first year, and grain where the corn was. The third year succeed the small grain again with cotton, the cotton with corn, and the corn again with small grain. The fourth year begins the rotation again.

In this triennial system of rotating crops the same land produces the same crop only every fourth year, hence allowing time for the accumulation in the soil of those nutritive ingredients required for each specific crop. Another very material advantage of this system, we think, consists in diminishing the area of your cotton crop, and increasing that of your small grain without diminishing the value of your income, while it improves the land, and affords more time for making manure. Everybody knows that, a large cotton crop per hand requires the labor of the hands from January till Christmas; but the above system allows time for harvesting the summer crops, sowing the pea crop and making manure enough to apply to one-third of the land cultivated.

In making manure we venture it as our opinion, founded only upon judgment, that compost heaps, on the Bomar principle for instance, are not economy. The stable, cow house and pen, pig-pen, chicken-coop, horse-lot, and temple, are the places to make manure, and will afford, properly managed, as much as the planter has time to haul out at the required season of the year. The manure made, we may be asked, how and to what will you apply it in your biennial system? In this we have system too, and will readily explain it.

First, it will be seen the cotton succeeds the grain stubble and pea crop plowed in; this then must suffice each year for cotton. On our wheat, &c., we sow all the cotton seed we can save, if it should be fifty bushels per acre. And to the corn in the drill

we apply all the manure we can make, fresh from the stable, cow-house, or anywhere we can get it.—This manuring, aided the next year by the cotton seed, annually increases the wheat crops, and consequently we have annually a heavier crop of peas and pea vines to bury in, in the fall for the next year's crop of cotton. In the corn, we plant peas for seed and food for milch cows and negroes in the winter.

We have sometimes been told, that, "your crop of corn will fire and burn up from this application of manure;" well sometimes ours does "fire," and so does all corn; but our observation is that, where one stalk "fires" from being heated by the manure, ten stalks die of poverty. Poor land and bad management, such as plowing when too wet, or plowing too close and too deep in the advanced stage of the crop, will do ten fold more injury to corn than twice the amount of manure generally applied.

Mr. Editor, those who are continually harping on the idea, that we plant too much cotton, are either those, who pursue this identical system, or do not plant at all. This latter class advocate generally the establishment of Southern manufactories; want the South to become a world within herself—grow her own tea, drink *Southern* coffee, eat her own sugar, in fine, prohibit the importation of everything exotic because we have a country the most favored under Heaven. All this is to us arrant humbuggery, and to this class we would like to address a word, but as it would involve many other questions, particularly that of slavery, we must forbear, and conclude, Mr. Editor, with an apology for occupying so much time and space in giving you our views on a simple tho' important subject.—*South Carolina Agriculturist*.

ARTIFICIAL AND PERUVIAN GUANO.

THERE is very little use, we conceive, of our planters and farmers making any more efforts to obtain Peruvian guano at a lower price than that at which it is now selling. A letter before us, by J. Y. De Osma, the Minister of the Peruvian Government at Washington, settles this point. It states that the Peruvian Government conducts the guano trade with foreign countries on its own account and risk, and regulates and establishes the price of this fertilizer, and that it finds it difficult to supply the demand for it at \$39 per ton. It is also stated that only about one-fourth of the supply is consumed in the United States, and that if a cheaper fertilizer can be obtained anywhere else, our farmers are not compelled to purchase of Peru. We, indeed, cannot blame that government for obtaining the highest prices it possibly can for guano; our farmers do the very same with their products. But cannot as good a

fertilizer be manufactured artificially for \$30 per tun? This is an important question for our chemists to answer. The commercial value of the principal constituents of Peruvian guano—including ammonia, phosphate of lime and potash, equal \$65 per tun—therefore, an artificial fertilizer, containing a like amount of such constituents, cannot be manufactured from drugs sold in the market at the present prices. But then, we have the wide sea washing our coasts, from the products of which, we think, cheap fertilizers might be manufactured. Sea weed contains a great amount of kelp, which is a crude alkali, eminently fitted for mixing with the myriads of coarse fish and king crabs that infest all the sea swamps and inlets of the Atlantic coast. These no doubt can furnish a great amount of ammonia and phosphates, and it appears to us, that an artificial guano, might be manufactured from them so cheap as to preclude the necessity of sending to the China Islands for the Peruvian. Here is a wide field for the introduction of a new manufacture, and from which fortunes may yet be made.—*Scientific American*.

INCREASING CONSUMPTION OF COTTON.

We took occasion recently to touch upon the growing demand of our Cotton Mills, and the necessity of turning attention more earnestly to the production of the raw material in the British Colonies and in India. The ravenous maw of the Manchester mills is insatiable. When we find that the raw cotton consumed by our manufacturers has doubled since 1847, it cannot be concealed that the cultivation of the staple is not keeping pace with our demands, and with the increasing wants of the Continent and of the United States. The returns just completed for the past year more than confirm our previous note of alarm, and should serve to put planters and merchants on the alert in this new and profitable field of production. The course of the cotton market is the barometer watched with much anxiety by our spinners and manufactures. With a low stock on hand of but 395,650 bales against 528,480 at this time last year, the question of whether the present crop in America will be 3,000,000 or 3,500,000 bales is of the greatest consequence to our manufacturers, who mainly depend upon the American States for their supply.

The last monthly trade report of Messrs. Du Fay and Co., of Manchester, furnishes us with a valuable summary of the cotton trade for 1855, showing what portion the foreign trade of the country has borne to the entire production of textile fabrics during the past year in pounds' weight of cotton and in estimated value. The home consumption of cotton fabrics, it may be remarked, was considerably less in

1855 than in the previous years. It amounted to 243,269,500 pounds weight of yarn, or to only one-third of the whole production of cotton yarns. High prices of provisions, particularly of wheat, have been the great impediment to an active home trade. The present year will no doubt contrast favorably with the last, should wheat and other articles of food continue to decline. In wheat there has been already a decline since the beginning of the year of fully 12s. per quarter of 480 pounds. Butcher's meat and other provisions have also given way in price. There is every hope, therefore, that more moderate prices of the necessaries of life will give an impulse to the inland consumption of textile fabric.

Analysing the figures of the Manchester trade report, we arrive at the following valuable digest—which it is well to place on record for future reference, furnishing as it does a useful summary of the entire cotton trade and consumption of the country in 1855; and an estimate of the difference of the sums accruing to the trade in cotton manufactures to pay for the expenses of fuel, machinery, drugs for dyeing, printing and bleaching, interest of capital, and every kind of wages, profit, &c., after deducting the actual cost of the raw material:

Cotton consumed in Great Britain last year,	836,000,000 pounds.
Waste in spinning, $1\frac{1}{4}$ oz. per pound,	91,437,000 “
Productions of yarns,	744,563,000 “

This quantity appears to have been disposed of as follows: Exported in yarns and threads, 142,715,500 pounds, exported manufactured goods, reduced into weight of yarn, 358,578,000 lbs., consumed at home, and not otherwise enumerated, 243,269,500 pounds. The cost of the cotton used, at the average price of 5 $\frac{3}{4}$ d. per lb., was last year £19,739,000. Taking now the manufactured values into consideration, we find that the declared value of exports last year, by the published statements, was:

Of threads and yarns,	£7,785,900
Of manufactured goods,	27,045,900
Estimated home consumption in the value of the goods exported, plus one-third,	24,446,000
	£59,281,800

Now, if we deduct from this the sum of £19,739,000, the prime cost of the raw material, as before stated, we have the sum of £39,542,800, to be ap-

plied for payments and profits, as previously noted, which is proportionately much less than the previous years.

We earnestly trust that we may credit the report that the Commercial Codes of France, Austria and Prussia are to be modified if peace is brought about. Russia has it in contemplation to reduce considerably the duties on some of our productions; and if this comes to pass, a more active trade with that country will be called forth than we have enjoyed for some years past. The Levant trade, we are told, has received a check, owing to the probable cessation of hostilities; but, looking at things in a prospective point of view, it cannot fail to become of more importance hereafter to this and other manufacturing countries. The Danubian Principalities are now taking more of our productions, and those great depots of the grain trade will afford ample and safe return if peace is established.

Whatever may betide, however, it behooves our textile manufactures to be up and stirring in urging on the cultivation of the cotton plant wherever it will thrive. The consumption of fabrics is progressing faster than the raw material comes forward, and if manufactures do not desire a famine in future years they must stimulate early production in new fields, in order to increase the supply and keep down the price of cotton wool.

A trade which pays £20,000,000 sterling for the raw material it uses, exclusive of other accessories, which produces goods therefrom to the value of £59,250,000, and which gives extensive employment to shipping, to labor, and to machinery, is one exercising an important influence on the national wealth and commerce, and deserves attentive consideration from all classes.—*London Journal of Commerce*, March 14.

FEEDING MILCH COWS ON TOMATOES, &c.

By BEE.

We tried an experiment in feeding milch cows, that did so well with us that we will give the facts, and perhaps it may be tested by others, and prove equally satisfactory to them.

In planting cotton we left two rows together, in which there was no cotton seed dropped. About four feet apart in each row, we had the soil dug up with a grubbing hoe, about twelve inches deep, with about two spades of good manure well incorporated with the loose earth, and made into a flat, low hill or bed. When a good season came, we planted a tomatoe plant (large round red) in each hill. They were worked with the cotton, and came very finely. Our squash patch was pretty large, and planted with a view to feeding our cows.

For two or three months we were able to have a half bushel or three pecks of tomatoes boiled with about the same quantity of squashes each day, and given to four cows. The results were remarkable. The quantity of butter exceeded the usual average for that number of cows; but what was the most striking result, and that which we had not anticipated, was the beautiful yellow color, and the delicious flavor imparted to the butter by the tomatoes.

South Carolina Agriculturist.

A CHEAP VINERY FOR EXOTIC GRAPES.

By THOMAS LEARMONT; GARDENER; COLUMBIA, S. C.

A DOUBLED-ROOFED house for a cheap Vinery can be erected at small expense and will answer a fine purpose. It should be placed fronting east and west and the structure should rest on brick piers of dimensions nine by eighteen inches, six feet apart in front, three feet high, including the ventilators.—Two feet of the front spaces between the piers should be double-boarded up and the intervening spaces filled with saw dust, or fine ashes. The ventilators should be one foot high, with hinges attached to the plate under the lower sashes. A door should be placed in the centre of each end and the rest double-boarded up, and filled as above. The lower or side sashes should be eight feet long by three feet six inches wide—the upper sashes seven feet long with corresponding width. For purposes of ventilation every other upper sash should be movable by a cord and pulleys. The roof should be supported by graceful slender pillars, in the centre of the vinery. The under wine trellis should be placed one foot below the glass. A wooden tank capable of containing sixty gallons of water, should be provided, and it is indispensable to have the water of the same temperature as the atmosphere of the house. The cost of such a vinery should not exceed nine dollars a running foot, and if constructed twenty feet wide by thirteen feet six inches high, could be extended to any desirable length. The border should be formed of well-rotted stable manure, mixed at the rate of two tuns to one barrel of bone dust, and it will require one tun of this mixture to every eight square yards should the soil differ in elements from that described in my last article. Hard clay subsoils, retaining moisture, require draining, and it is best to cut a drain round the outside, two feet below the base of the border, care being taken to fill it up with loose rock or brick-bats. The border should not be less than eighteen feet wide, and two feet six inches deep. No inside border is required except about three feet to give sufficient room in which to plant the vines. If the clay is near the surface, in making the border, throw it out, substituting good soil. The border should not have a surface level.

higher than the surrounding ground. When all is finished and in proper order, procure vines propagated from single eyes, in pots of one year's growth. When the buds begin to start plant them out, and be sure to shake out and spread well the roots towards the outside of the house. Do not plant the vines deeper than four inches, and after they are so planted, mulch the border with four inches of half-decayed leaves, collected from the woods during the previous fall.

The following are the most suitable varieties for small vineries; say twenty by twenty-one feet, planting three feet apart:

6. Black Hamburg,
2. Black Prince,
2. White Frontignau,
1. Syrian,
1. Black Lombardy,
1. Grizzly Frontignau,
1. Muscat of Alexandria,
1. Caunon Hall Muscat.

For large vineries other varieties may be appropriately and profitably added, but as I consider the Black Hamburg, the very best variety in cultivation, it should be extensively planted.—*South Carolina Agriculturist*.

FRUIT.

By SHAH ICHAH, GREENVILLE, S. C.

FRUIT is the subject of my story—delicious ripe fruit—and in plainest language to express it, it is a direct gift of God to man; pluck it and pass it immediately to the mouth. It is grateful to the palate and sustaining to life, without the inventions or interventions of butchering, carving, roasting or grinding, kneading and baking. Think you that was a fable—the garden of Eden? It is the proper place from whence to derive our sustenance. Just show me the persons who do not like fruit in its season, and I will predict of them stomachs vitiated with the poison of the still, or the lesser poison of the coffee pot, or else constitutions shattered with the narcotine of tobacco.

Fruit! it is the yearning of earliest childhood to climb fences in defiance of threats, and steal to the orchard, and gather the worm-stung fruit. It is instinct, it is not reason; and how seldom does instinct lead astray, even in the lower order of animals.

And, now, instruct us, oh! Editor; for thou knowest how to have fruit in due season, each of its kind. First, the delicious strawberry! and where's the child that would not desert his mamma for a saucer full of strawberries and cream, or a bowl of red raspberries in the same food? plums, peaches, pears, and apples, 'tother side of Christmas.

Is land so dear? is labor so high? is water so scarce, that this round of fruits is not attainable by every farmer in the land? It cannot be so. England has her schools for gardeners, the North her nurseries, and may we not profit by their example. Here is the paragraph that has given you this article, from *Life Illustrated*:

"FRENCH PEARS.—A recent attempt to import pears from France was quite successful. The pears came by one of the Havre packets, and arrived in good condition. The largest weighed about one pound, and sold readily for *one dollar* each; smaller ones sold for seventy-five cents, and those of ordinary size for fifty cents. The fruit was grown in the open air."

Do you hear that, you dwarf pear men? Why, sirs, you can make coppers as fast as you can wink your eye. Is it not possible to raise pears, almost as plentiful as apples?—*South Carolina Agriculturist*.

AMELANCHIER—NEW AMERICAN FRUIT.

A STRIKING and most attractive tree, frequently attaining the height of twenty feet is the SHAD-FLOWER or MAY CHERRY. The first flower-bearing tree which expands its white blossoms along the shores of our Southern rivers, its long racemose flowers shine out like snow-drifts, amongst the leafless trees. In May, its rich red fruit, contrasts in sweetness with the fragrant strawberry, and is acceptable to the palate of most persons. The botanical name of this tree, is *Amelanchier Botryaphium* (Torrey and Gray) but it was classed by Elliott as *Aronia Botryaphium*. Transplanted from the woods, it is generally fruitful and bears abundantly. It is a graceful ornament to the lawn, and is not subject to the attacks of insects, retaining its light green foliage till frost. If it were an exotic, it might be more popular as an ornamental tree, as amateurs usually neglect the beautiful within reach of their homes, for popular novelties from abroad.

The *Amelanchier Rotundifolia* is another variety, remarkable dwarfed in its habit, and is found widely diffused throughout middle South Carolina and Georgia. It attains the height of six feet and flowering about the 10th of April, invariably produces a heavy crop of fine black fruit. Several of our friends cultivate it, and it should fill the place in the Southern garden, which in Northern climates is occupied by the currant family. It is really a valuable fruit, and, being extremely sweet, enters into the manufacture of preserves, jams, and jellies, and with the usual preparation, is a fine dessert fruit. It is easily propagated by suckers, and would be a valuable addition to the smaller fruits, of every garden.—*Editor South Carolina Agriculturist*.

D. JAY BROWNE, Esq., of the Patent Office, read the following paper, to the U. S. Agricultural Society:

ON THE IMPROVEMENT OF THE HORSE IN THE U. S.

The "Atlas Statistique de la Production des Chevaux" gives some interesting details respecting the method of the "Administration" for obtaining the most correct information with regard to the number and quality of the various races of horses to be found in France. The Society or Administration for breeding this animal has divided that country into twenty-seven districts, which comprise two breeding establishments, twenty-four depots for stallions, and one for army horses. In order to arrive at an exact estimate of the equine population, persons especially chosen for the purpose were employed in 1850 to visit every stable, village, and canton in each arrondissement and department. The result of this census of horses demonstrates with sufficient clearness the progress and utility of these establishments. The advantages they afford in improving the breeds generally, as well as in giving increased value to the animals in a commercial point of view, are already appreciated by the French, and naturally lead to the suggestion of adopting a similar system in the United States for the improvement of the horses of our army as well as for other purposes. If a depot for stallions of approved breeds were established by Government in each State and Territory in the Union for public use, free of charge, incalculable benefit would doubtless accrue to the country, and in less than ten years the improvement and increased value of the horse would be immense.

The question arises, how shall this change be brought about? Where are the horses to be obtained? At whose expense? And by whom shall it be accomplished? It has been suggested that it would very properly come under the direction of the War Department, with the view of providing for the future wants of the army, and that an adequate appropriation should be made by Congress for that purpose. With equal propriety it has been asserted that it could be done by the States themselves through their Agricultural Societies, Boards of Agriculture, &c. The breeding horses of one or both sexes could be imported in sufficient numbers and varieties from various parts of Europe, Northern Africa and South America. In the selection of breeds, as to their adaptation to the economy, uses, and climates of the different sections of our country, it would require much investigation, practical knowledge, science, and discrim-

ination. Whether such an enterprise can ever be brought about remains only for the public to decide.

The work referred to in the commencement was laid upon the Secretary's table for inspection.

EFFECTS OF CLOVER HAY ON ANIMALS.

SOME late writers have taken the position that clover hay produces a most injurious effect on domestic animals, particularly horses, and that to this cause the great increase of diseased horses is to be attributed. We lately heard a farmer affirm, that he believed the introduction of clover into general cultivation the greatest curse yet inflicted on the country, and assigned as a reason for this singular opinion its effects on animals when used as fodder. Late English writers have attributed to this kind of hay the prevalence of heaves in horses and the great increase of other diseases that affect the respiratory organs. This is a most important subject, and should receive a full investigation. Clover is too important a plant to be discarded, or condemned, except upon the most satisfactory evidence. Its value as a fertilizer and a preparative for wheat, to say nothing of its use for pasture or hay, would demand that it should not be condemned unheard. For ourselves, we have very little belief in the injurious properties assigned to clover. We have used it constantly for pasture and for hay, more than thirty years, and never to our knowledge, has any animal suffered from it; certainly no horse has been taken with the heaves when fed on it, or while in our possession. As hay for sheep, we have considered it unrivalled, and should have no fears that any stock would not winter well with a supply of well-cured clover hay.

And here lies, we think, the great source of objection to clover hay. It is too often imperfectly cured. To save the leaves and the heads, which are apt to fall in handling or curing, the hay is put into the barn while the large stems are full of moisture, or the natural juices, and the fermentation which ensues causes the whole mass to become damp; and if not spoiled wholly, it becomes mouldy, black, and when used raises such a dust it is no wonder that horses and cattle are choked or their lungs destroyed. Our experience shows that clover may be perfectly cured without losing any of its valuable parts; cured so that when fed out, no more dust will be flying than from timothy or herds grass, and we shall be slow to believe that from such hay any injury to animals ever ensues.—*Ohio Valley Farmer.*

ONE OF THE MOTHERS OF '76.—A correspondent of the Irasburg (Vt.) Gazette, says: "Sarah Philbrook, of Hardwick, Vt., a widow of a revolutionary soldier, and whose age is ninety-four years, made and sold last season from two cows, six hundred pounds of butter, besides milk and butter for family use. I was at her house two days since and saw twenty-two and a half pounds of beautiful butter that she had just made, in eight days, from the same two cows, being the first churning of this season. Said cows have the appearance of being what is termed the native breed. Mrs. Philbrook never keeps any hired girls; has no assistance whatever about the house, only what is rendered by her boy, who is not quite seventy years old, and who does not intend to marry while his mother is able to do her work."

MEASURING CORN IN THE CRIB—CORRECT. RULE.

EDITORS SOUTHERN CULTIVATOR:—I see, in the April number of the *Cultivator*, a rule given for gauging or measuring corn in the ear, by Mr. J. D. Gunnells, which he seems to think correct, but it will not exactly do. In a bin of corn 10 feet square and 10 feet high, it will loose $3\frac{1}{2}$ barrels. I have noticed several rules in the *Cultivator* heretofore for the same purpose, but do not recollect to have seen one yet that is exactly correct, and as I have one that is nearer right than any of them, I give it to you for publication, if you have room for it. I have tried it faithfully and would as soon measure corn by it as the half bushel. A nice trial will convince any one of its correctness. Here it is:

RULE.

Multiply the length, width and height together and divide the product by 12, and you will have the correct answer in barrels. Respectfully yours,

J. F. MORTON.

Dirt Town, Ga., April, 1856.

CAMELS IN TEXAS.—The Washington, (Texas) America, of the 21st ult., has the following:

It is quite a common sight to see camels and dromedaries marching through our streets. The camels are now employed in carrying government freight from Powderhorn to the depot. They carry the enormous weight of 1600 pounds, and with the greatest ease. The sight of them stampedes all the horses and mules. They are certainly not handsome creatures.

THE Royal Geographical Society, of London, has awarded a gold medal to Dr. E. K. Kane, for his discoveries in the polar regions. At the same meeting of the Society, Lieut. Maury was elected a member.

For the Arator.

LONG CREEK, N. C., JULY 14, 1856.

EDITOR OF THE ARATOR—*Dear Sir*: Enclosed is my subscription to the Arator. I regard it as not only an excellent agricultural journal, but as a good family paper; repaying its readers in both departments double the amount of their subscription.

In your articles, and those also of your correspondents, upon "deep plowing," you make but little discrimination between *clay* and *sand* foundations. Upon the former, I know it to be necessary to good cultivation or certain profits; but upon the latter, as certain destruction of the soil. If our sandy lands in this section were plowed as deep as is generally recommended, they would soon become unable to bring corn peas. By the by, corn peas, as a green crop is the cheapest mode of manuring our lands.

Yours respectfully,

T. H. WILLIAMS.

The sandy lands, we believe, should be plowed tolerably deep, but not turned. Our sandy lands, at least, will bear this mode of cultivation, and by adding manure, gradually acquire greater depth of soil and fertility.—Ed.

SOME WHEAT:—The best specimen of wheat we have seen this year—and we have no recollection of ever having seen better—was left at our office a few days since. The heads are unusually large and well filled. They will average eighty good sound grains to the head, and Mr. Samuel Kerr, the producer, says there was no guano used; but was simply the product of well-cultivated Guilford soil. If any of our neighbors can beat this, just let them send a shock or two for a sample, and they can have the medal; if they fail to do so, Mr. Kerr can retain it.

Greensboro' Times.

MACHINE FOR CUTTING DOWN CORN STALKS.—By W. S. Tilton, of Boston, Mass.—Consists of a two-wheeled vehicle, having two upright shafts, placed one on each side near the wheels. Horizontal knives are attached to the shafts, which are made to revolve by connection with the wheels of the vehicle. As the machine advances, the stalks are clipped by the knives, and fall prostrate. Farmers will be pleased with this invention.

IMPROVED CORN PLANTER.—By George Atkins, of Pittsburg, Pa.—This is a small implement, to be carried in the hand. The lower part is thrust into the ground where the seed is to be deposited. By the act of thrusting, the seed is liberated from within, and caused to fall into the earth. The parts are very simple.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., AUGUST, 1856.

OUR STATE FAIR.

THE time is rapidly approaching for this important Exhibition. The Executive Committee, we learn, have recently held a meeting in this City, and resolved to enlarge some of the buildings in the Fair Ground, and make such other improvements and arrangements as are deemed necessary for the accommodation of the numerous exhibitors and visitors expected. Every thing will be done to render it attractive; and it is hoped the people in every part of the State will make arrangements to be here, with something to show. We have heretofore recommended a special deputation from every County; and we again earnestly urge this measure upon the attention of the friends of the cause in the respective Counties.—Let us have them here, from Cherokee to Beaufort, with something to contribute to the show from the mountains, from the middle country, and from the seaboard.

EXHIBITION OF THE U. S. AGRICULTURAL SOCIETY.

EXTENSIVE preparations are making for this Exhibition, which is to take place at Philadelphia, on October 7th, 8th, 9th and 10th. Twenty-four acres of ground will be laid off and put in readiness for the Fair. The trotting course will be half a mile round. Agricultural implements, products, &c., will be exhibited in tents. And the whole affair will wind up with a grand banquet for ladies and gentlemen.

DO YOU INTEND TO VISIT THE FAIR?

COME, don't hesitate. Begin now to make your arrangements, so as to make it convenient for you to attend. Don't say, it will not benefit you. You will be much improved by it—in mind, in heart, and in health; and it will contribute much to your pleasure and that of others. If there are any sacrifices to be made, submit to them cheerfully.—Your duty to the State, your social obligations, and your self-interest, demand it.

OUR RECEIPT LIST

Shows such a beggarly account of empty purses, that we are really ashamed to present it to the public. Let none but delinquents look at it.

The monthly receipts of other journals, published in other States, show the payment of hundreds. The friends of improvement *there* take an interest in extending the circulation, and exhibit a noble pride in rendering adequate support to their own Agricultural periodicals. Subscriptions are gotten up, by the exertions of influential men, in every neighborhood; and thousands are thus added to their lists. In North Carolina, only here and there an effort is made in any of the counties, and our subscribers come in like angels' visits—few and far between. This ought not to be so. The friends of agriculture, in every section and neighborhood of the State, should have sufficient zeal and liberality to exert themselves in behalf of those who are laboring to promote their best interest. They owe this to themselves, to the cause, and to the State; and often they acknowledge and promise to themselves they will do it; but they put it off, from time to time, for a convenient season, until it is again and again forgotten, and totally neglected—whilst the publications which they confess to be useful and desire to prosper, are left to languish, or subsist upon empty compliments. We do not make these remarks in the spirit of censure, but simply to call the attention of our readers to generous impulses which they have all often felt, and kindly purposes they have often formed, but not yet fulfilled, of getting up, and forwarding to the editor scores of new subscribers to the ARATOR. What will they do? *Nous verrons.*

UNKNOWN RESOURCES COMING OUT.

WE learn that upwards of four thousand dollars worth of Rabbit Skins, from the upper Counties, came down on our Central Railroad the other day, on the way to market. Besides these, there were a great many Opossum and Bear Skins, and the skins of other wild *varments*. By the way, we understand 'possum skins possess a commercial value not to be sneezed at by the witlings who associate 'possums and 'simmons, always in derision, with the name of the old North State—a State which the world now begins to learn stands first among her proudest sisters, for virtue, intelligence, and substantial wealth.

THE drought still continues. The corn crop is suffering materially.

WORK FOR AUGUST.

THE corn crop is now generally laid by: but late corn still requires work. Let it be plowed so as to leave the surface level and smooth, light and free from grass and weeds.

It is earnestly recommended by some, as a saving of labor and product, to abandon the practice of pulling fodder, and, as soon as the corn begins to glaze or get hard, to cut the stalks up *at the ground*; set the stalks up thus cut, 25 or 30 to a shock; and when the whole is perfectly dry, store it away in the barn, or stack it. It can then be shucked at leisure; and shucks, blades and stalks, after being cut up by a straw cutter, fed to stock. Let our farmers try it, as prudence would dictate, at first, on a small scale.

Cotton should be thoroughly cleaned from weeds and grass, and left with the surface lightly and neatly stirred.

Turnips must be sowed in all this month. The Ruta Baga, particularly, should be drilled—the rows being from 2 to 2½ feet apart. A deep sandy soil, made rich by stable, cow-pen manure, or guano, well mixed, and finely pulverized, is best for this crop. One pound of seed will sow an acre. It is said if the seed are soaked 24 hours in lamp oil, and dried by being mixed with ashes or plaster, the insects will not be so apt to attack the young plants. A top dressing with leached ashes, after sowing does good. When up, thin out from 8 to 10 inches apart, and keep out the grass, with the hoe, until they shade the ground. We give the Ruta Bagas one plowing.

Sweet Potatoes should be kept stirred, and perfectly free from grass and weeds, until the vines are masters of the whole ground.

Composting, Ditching, and Draining.—Let all the leisure of this month be devoted to making manure, ditching low places, draining and clearing up flats and swamps, and thus reclaiming much of your most valuable and productive land.

The Garden must not be neglected. Cabbage, Turnips, Beets, and Lettuce may still be sown.—Irish Potatoes may be planted for a fall crop—best mulched. Cucumbers, melons, and snaps may be planted for pickles. Be careful, at all times, to keep out weeds and grass.

WHAT HAVE YOU FOR THE FAIR?

BRING something. Remember, that which is very common to you, may be rare and interesting to others. Select something respectable, and bring it along. The gratification it will afford to others, will amply compensate you.

DOMESTIC MANURES.

WE would by no means discountenance the use of Guano altogether, when it can be procured on living terms, but would earnestly recommend to our readers a cautious and prudent application of it, and a reliance, mainly, on home-manufactured manure. There are many fertilizers on every farm, of equal value to guano, which are almost universally wasted. Among these, we may mention,

1. HEN MANURE.—This is excellent for all kinds of garden vegetables, and, if properly managed, a little will go far as a fertilizer, for all crops. Take decomposed swamp muck and mix half and half with the scrapings of the hen-house and poultry roost, and, just before using, mix with it one bushel of ashes to five of the mixture, and put half a pint in each hill of corn. The result will be an increase of the crop 33½ per cent. The ashes should not be added before ready for application, because it has a tendency to set free the ammonia and cause loss before the mixture is covered in the earth.

2. NIGHT SOIL.—This should be prepared in the same way, with the addition of one-fifth stable manure and a quantity of rich woods mould in equal proportions with the muck; with a sprinkle of lime or ashes and plaster or charcoal, or copras dissolved in water—half pound of the latter to each bushel of night soil. Let these ingredients be thoroughly mixed together and put up in bulk to stand from four to six weeks, and then be shoveled over and mixed with one-tenth ashes. A pint of the mixture in each corn hill, will increase the crop, on land needing aid, at least a third.

3. HOG-PEN MANURE.

4. COW-PEN MANURE.

5. STABLE MANURE.

These three, composted in a similar way, with the addition of leaves, straw, weeds, any kind of rich earth, and, if intended for sandy land, a large proportion of pure clay, will furnish a much larger supply of valuable home-made manure than any one who has not tried it, would imagine, at a much cheaper rate, too, than Peruvian guano at 55 or \$60 per ton.

6. KITCHEN AND YARD COMPOST.—All the trash, suds and dirty water and sweepings and scrapings should be thrown on this.

7. GREEN CROPS.—Clover, Peas, and Buckwheat turned under, are also valuable and cheap methods of fertilizing the land, and should enter into the system of improvement of every farm.

In the name of common sense, if we do not use foreign fertilizers less, let us resolve to use home-manufactured manures more.

This month, all disposable force, and every energy should be directed to collecting, saving, and hauling materials to increase the compost heaps. It will pay—it will pay well. Your next year's crop will prove it. Many of your farms need—many of your farms must have—manure, or all your labor, from year to year, is lost. Until it is applied, no lick that you strike, no furrow that you plow, no complaint that you utter, no tear that you shed, no *prayer* that you offer for rain will pay—nothing, nothing will avail. A priest was called upon to pray over the barren fields of his parishoners. He passed from one enclosure to another and pronounced his benediction, until he came to a most unpromising case. He surveyed it in despair, exclaiming, "Ah! brethren, *no use to pray here—THIS NEEDS MANURE.*"

"MY CLOVER LOT SAVED IT."

HAVING occasion to visit a neighbor a few days ago, who is a skillful and good managing farmer, and always has plenty of old corn and fat horses; and observing that he had undisturbed eight or ten stacks of last year's blade fodder, we remarked, if his crib was proportionally plethoric, he would not suffer even if the drought should entirely cut off his present crop. That was saved, he replied, by my clover lot. He keeps two or three acres in red clover and turns it to good account. We state this as a useful hint to all of our farmers.

PROTECTION AGAINST WEVIL.

THE Concord Gazette states that an old farmer's plan of protecting wheat against both the black and white weevils, which has uniformly proved successful, is as follows: Take small Poplar bushes, about an inch in diameter, which grow plentifully on creek or branch bottoms, trim off the twigs, and stick them down into the boxes or garners containing the wheat, butt first, to the bottom. It is very simple and easily tried.

CARROTS FOR HORSES.

It is said horses learned to eat Carrots, prefer them to corn. They promote the health of this noble animal, save grain and fodder, and should become a part of every farmer's crop. Bear this in mind, and prepare at next season.

EARLY RISING.

Early to bed, and early to rise,
Makes a man, healthy, wealthy and wise,

This is an old saying, and properly understood and practiced, proves itself a verity.

A certain amount of sleep and rest are necessary as "tired nature's sweet restorers;" but for these, the night was made—the day for wide-awake active, energetic, systematic, constant labor. All, therefore, men, women and children, should be up in time to behold the "rosy dawn of day." If any of our readers indulge in different habits—turn after morning light, upon their beds, like doors upon the hinges, hug their pillows, and fold their hands to a little more sleep, we insist upon a speedy reformation. If they need assistance, let them get an alarm clock; and if that should fail to produce the desired effect, then we would recommend to them the new invention of a friend, who will soon be out with a patent bedstead, which is to be so constructed, with a spring, that it will be wound up at the right bed time, and at day-light, precisely, will run down, capsize and turn its occupant so roughly on the floor as to make him find himself getting up in time wide awake for all day. Will the Scientific American put this in its list of applications for new patents.

TO PREVENT THE ROT IN POTATOES.

MR PHINEAS PRATT, in the New England Farmer, says, if there are ashes and lime enough in the ground, and good seed are planted, there will be good potatoes and no rot, either in potatoes or grapes. This is an important hint.

He prepares bones in the following manner:—After being pounded or ground to one-half inch pieces, they are covered close in a heap with ashes, but so that they will not heat. In this heap, they will dissolve, and if well covered with mould, to save the ammonia, it secures all that the bone can impart to the soil.

TO DESTROY CATERPILLARS.—Molasses have been successfully used to destroy caterpillars. The insect cannot leave a nest, or travel over a limb, smeared with molasses, and it in no way injures the tree.

We are indebted to the Hon. D. S. REID for a copy of the Map of Central America, just published by order of Congress.

PREPARATION OF MUCK.

Muck is a mass of decaying or putrified vegetable matter—such as is often found in hollows, at the head of drains, at points on streams where the washings of the high lands are arrested and deposited, and over marl beds.

The preparation of it for use should be varied according to its quality, which differs materially from the neighboring geological formation. That which is found over beds of shell marl, is the best, and may be prepared by mixing with it thoroughly one bushel of quick ashes or quick lime to the cord. It is ready for use as soon as prepared, and is nearly equal to rich stable manure for corn, cotton, or wheat. That which is found in places where there is no lime, requires a much greater proportion of lime or ashes—say five or six bushels to the cord, and if wet and clammy, should lie in bulk several weeks and sometimes months, before mixed, and would be greatly improved by the addition of ten bushels of strong stable manure to the cord, wetted with strong salt and water, or mixed with half a bushel of plaster, or a bushel or two of powdered charcoal. In almost every case, muck should be thrown up and left to take the air awhile, before it is placed in the barn-yard, stalls, or compost heap.

In addition to the above preparations, it should enter largely into all the compost manures, of whatever ingredients, made on the farm.

The mud thrown up in ditching, in almost every place where ditching is necessary for drainage, has a mixture of more or less valuable muck for the compost heap, and should be removed, after a few months' exposure, for that purpose.

TRY RED CLOVER.

Sow at least one acre, on your land which has the best clay foundation, with your wheat, this fall, and at least one acre, with your oats, early next spring. We recommend this, as a trial, to those who doubt. We are sufficiently satisfied, to believe large fields may be profitably put in clover—for hay, for pasture, or for improvement. Our agriculturists should pay more attention to *clover*, *grass*, and *roots*, as *auxiliaries* to the staple crops.

AGRICULTURE.—It is believed by many of our citizens that there has been a fourth more wheat made in Sampson county this year than was ever made in the county any one year before. The prospect of the corn crop is flattering, and we look forward to the fall and winter with the prospect of plenty of 'things needful.'—*Clinton Independent*. July 3.

EDITORS' VISIT TO TEXAS.

[Continued.]

RALEIGH, JULY 24, 1856.

A. T. MIAL, Esq.—*Dear Sir*: I promised you a sketch of my trip to San Antonio, which I have not found time to redeem at an earlier day than the present.

On the morning of the 20th March—fine, bright, pleasant weather—Dr. Jones, Col. Sledge, and myself, set out. We reached Buster's, five miles beyond Brenham, on the road to La Grange, that night. He keeps a plair, but good house. The next day, we travelled over a splendid post oak and prairie country, 36 miles, to La Grange—passing some charming places for residence, combining beauty and grandeur of scenery—(hilly prairie with skirts of post-oak timber)—health and fertility, rarely to be found united in any country. Mr. Wilson's, ten miles from Brenham, is a very handsome place—a large white house, on a lofty eminence, approached by gradual slopes, overlooking a wide scope of most beautiful and picturesque country, of hill and valley, forest and open prairie, all putting on the fresh and delicate livery of Spring. Lands here, improved, \$10—unimproved, \$5 per acre. Distance to market, 90 miles. Ledbetter's, 7 miles farther west, in Fayette county, is also a desirable place. The settlement is in the post-oak timber, near a creek, which runs through a corner of his horse lot. The improvements are neat and substantial. The lands produce, on an average, 1400 lbs. seed cotton and 35 bushels of corn to the acre. Having other lands, Mr. L. will sell his farm of 2,300 acres, 500 of which is bald prairie, at \$10 per acre. It is within half a mile of a Presbyterian Church and school house, and 2½ miles from a little village, called Round Top. Five or six miles from this place, is Rutersville, another small village, located in a high, healthy and beautiful country, near a creek, affording abundance of water. Here is located a Methodist College. Two large white houses constitute the college buildings, erected on a hill, in a post-oak grove—a commanding and beautiful site for building, which cannot be surpassed. We next reached La Grange, county seat of Fayette, a pleasant looking village of about 1000 inhabitants, on the Colorado River. Here we stopped but a few minutes, and refreshed ourselves with some good cistern water—the best water I had tasted since I left Raleigh. The river valley here has but little timber, but is rich, and believed to be healthy by the residents. We reached Mr.

Lewis', five miles west from La Grange, where we tarried for the night. Our landlord is a firm believer and "medium" of "spiritualism." He is a Connecticut man—has been in Texas 18 or 20 years, and has a family of 8 healthy looking children—having lost but one. His wife, a plain Alabama woman, thinks there is no place as healthy as Texas. They live in the midst of a German population.

On the 22nd of March, we reached Gonzales, a distance of 40 miles, on the Guadalupe river.—Passed through some splendid prairie, and about 22 miles from La Grange; came to the residence of Mr. Penn, from Virginia, brother to the late Rev. Dr. Abram Penn. His dwelling is beautifully situated in the edge of the post-oak timber, overlooking an extensive and magnificent prairie. We then passed a poor post-oak ridge, extending about ten miles, with no water except a very deep clear spring near the road, which seemed to have boiled up right there for the refreshment of weary travellers. Next we descended into a valley and crossed a muddy, stinking, three-pronged creek; and about ten miles from town, we came to Peach creek, the wide, rich valley of which abounds in the wild peach, indicative of fertility. We reached Gonzales late in the evening. It is a town of about 1500 inhabitants, on a high, healthy situation, on the east side of the river. The low bottom of the river is heavily timbered, from 100 yards to half a mile wide, and the second valley is open prairie—both black, stiff, rich land. Land is offered here for \$8 for unimproved, and \$10 to \$20 per acre for improved. The planters are all said to be in debt. The distance to market is about 120 miles. The only notable incident of the day, was an alarm at a bog. While our horses were drinking in the run of a ravine, my horse began gradually to give way under me, and, thinking he was "bogging down," I instantly sprang to the ground, passing through the dropped bridle, and under the lowered neck of the horse of a friend at my elbow—all having been done in a flash, to the great surprise, but, when it was found my horse was gently kneeling instead of bogging, to the no small amusement, of my companions. I landed safely, however, on the grassy bank; and after the welkin had ceased to ring with loud and prolonged laughter at my expense, we quietly pursued our journey. I had rather leap through a troop of horses, at any time, than sink to the crown of my hat in a bog.

In my next, I shall probably take you from this place to Seguin, the Cibolo, San Antonio, the Medino, Austin, and down the Colorado to Bastrop—winding up with my views of the advantages and disadvantages which I observed in Texas.

Very truly yours,

THOMAS J. LEMAY.

PRODUCE, &c.

PRODUCE is commanding fine prices. Wheat in Petersburg, \$1.40 to \$1.60 per bushel. Cotton, \$10½ to 12½. Tobacco, 8, 12, 15 to \$30; and a lot of N. C. Tobacco has been sold in Lynchburg at \$60 a hundred. Corn 65 cents a bushel.

The Richmond Whig, speaking of the crops in Virginia, says: "A general alarm, from the mountains to the seaboard, is felt for the corn crop.—The rains have been partial and limited in quantity, the chinch-bug universal, and like the sand of the sea shore for numbers. Many corn fields are entirely destroyed by them already, and others can only be saved by timely and copious rains." This is true, to a considerable extent, as to North Carolina. Rain is greatly needed in some sections, and we hear of the ravages of the chinch-bug, in many instances entirely destroying the corn.

HAIL STORMS.—Some parts of this county have suffered severely from hail storms which passed over it on Saturday evening and Sunday noon.

The one on Saturday evening, we understand, commenced about six or seven miles north of this place, and extended down to the neighborhood of South Lowell, destroying almost entirely the corn and other exposed crops, and demolishing the glass in windows. Some individuals, we are informed, suffered severely, among whom are Mr. Tyre B. Ray and Mr. George Jackson.

The storm on Sunday noon was almost unprecedented in its severity and the destruction it occasioned. The hail fell, we are told, for nearly half an hour, some of it as big as a hen egg. It commenced about six miles east of this place, and extended down about six miles in length and some four miles in breadth. The destruction of the corn, cotton, tobacco, &c., is represented to be almost entire. Some individuals contemplate planting corn to supply fodder destroyed.—*Hillsboro' Recorder, July 9.*

NEVER permit green fruit to decay on the soil beneath the trees. In every apple, pear, plum and cherry, which is prematurely cast, there exists a minute insect which eats its way out in the time, and becomes the source of evil to the succeeding crop. Gather all up and either feed them to your domestic animals, or dispose of them in some way which will secure you against the results which must necessarily ensue from neglect. Swine turned into orchards the last of June, and permitted to have access till the fruit is gathered against insects by destroying the wormy fruit that produces them.

BLACK TEAS.

As soon as the leaf-bud begins to expand it is gathered to make Pekoe. A few days later growth produces black-leaved Pekoe. The next picking is called the Souchong. As the leaves grow larger and more mature they form Congoa; and the last picking is Bohea.

Bohea is called by the Chinese Ta-cha, (large tea) on account of the maturity and large size of the leaves. It contains a larger proportion of woody fibre than other teas, and its infusion is of a darker color and coarser flavor.

Congou, the next higher kind, is named from a corruption of the Chinese Koong-foa, (great care or assiduity.) This forms the bulk of the black tea imported and is mostly valued for its strength.

Souchong—Seacon-choong (small, scarce sort) is the finest of the stronger black tea, with a leaf that is generally entire and curly. It is much esteemed for its fragrance and fine flavor.

Pekoe is a corruption of the Canton name Pak-ho, (white down) being the first sprouts of the leaf buds—they are covered with a white, silky down. It is a delicate tea, rather deficient in strength and is principally used in flavoring other teas.

MANUFACTURE OF STEEL BY ELECTRICITY.—The London Mining Journal contains an account of some experiments, by which, in contradistinction to the ordinary method of manufacturing steel, it is proved that a process has been discovered of converting iron into steel by a current of electricity, passed through the iron when placed in a furnace, and embedded in charcoal, whereby an immense saving of labor, time and fuel, is the more immediate result. The operation of the conversion of iron into steel in this manner gives a greater power of governance to the operators, inasmuch as the application of the latter for a certain amount of carbon being taken, absorbed or concentrated, and amalgamated with the iron, and thereby increasing or diminishing the action of the battery; different qualities of steel will be produced with a certainty, regularity and efficiency, which hitherto, under the ordinary process of manufacture, has been the object wanting—the great desideratum sought after, as well as the end desired to be attained.

PRESERVING BUTTER.—The best plan of salting butter is to use the purest salt only; heat it on the fire before using it, to drive off all the moisture, and apply it warm, when working the butter.

ATTEND TO YOUR PEACHES.—The Alabama Planter says:—A gentleman handed us yesterday the following, which may be of service to some of our readers. A friend of mine has just informed me of the success he met with by the application of charcoal to peach trees. A few years ago he had some fine peach trees in his garden which invariably had wormy fruit, and the trees were full of gum. When the fruit was about the size of marbles, he had the earth removed from each about two feet round and three inches deep, and filled with charcoal. The result was that the fruit grew to a fine size, free from worms, and every year since the fruit has been good, and the trees became healthy and free from gum, while two trees left without charcoal continue to bear wormy fruit and are unhealthy.

LEAN DIET.—A Methodist minister at the West, who lived on a very small salary, was greatly troubled at one time to get his quarterly installment. He at last told the paying trustee that he must have his money, as his family were suffering for the necessaries of life. "Money?" replied the steward. "*You preach for money?* I thought you preached for the good of souls!" "*Souls!*" replied the minister; "I can't eat souls, and if I could it would take a thousand such as yours to make a decent meal!"

SUBSTITUTE FOR CREAM IN TEA OR COFFEE.—Beat the white of an egg to a froth, put in a very small lump of butter and mix well; then turn the coffee to it gradually so that it may not curdle. If perfectly done it will be an excellent substitute for cream. For tea, omit the butter, using only the egg. This might be of great use at sea, as eggs can be preserved fresh in various ways.

It is recorded on authority, that a Frenchman, learning English, and anxious to say something very striking, in parting from the lady of his heart, carefully consulted his dictionary, and there finding that "*to pickle*" meant "*to preserve*," bid her farewell with the emphatic exclamation "may Heaven pickle you."

"Ah, Sam you've been in trouble, eh?" "Yes, Jem, yes." "Well, cheer up, man; adversity tries us, and shows up our better qualities." "Ah, but adversity didn't try me; it was old Baily judge, and he showed up my worst qualities."

SOME CUCUMBER.—Mr. Alfred Johnson of this place has laid on our table a Cucumber five feet and one inch long, its circumference at the largest place is nine and a half inches. We chalenge the world and the rest of mankind to beat this. We shall try to preserve it until next County Fair, where every body can see it.—*Clinton Independent.*

NEW YORK STATE AGRICULTURAL COLLEGE.—The Legislature of New York have authorized a loan for twenty years, without interest, of the sum of \$40,000, for the purpose of aiding in the purchase of a farm and erecting buildings for an Agricultural College. The citizens of Ovid, Seneca county, recently have raised \$40,000, and there can be no doubt that the institution is secured to the farmers of New York.

PAYMENTS FOR ARATOR

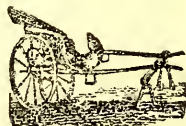
SINCE JULY NUMBER.

Tull, John, Kinston,	\$1
Tull, Henry, do.,	1
Lindley, Owen, Cane Creek, (B.)	1
B. A. & T. W. Woodall, Elevation,	1
Chalmers, C., Carbondon,	1
Sessums, Mary Ann, Battleboro',	1
Pitt, James, do.,	1
Price, John, do.,	1
Powell, Jesse H., do.,	1
Poole, William R., Wake,	2
Trawick, R., Wake,	1
Hamilton, R. A., Raleigh,	1
Thomas, David, Louisburg,	1
Iredell, J. J., Raleigh,	1
Williams, T. H., Long Creek,	1
Jenkins, J. D., Tarboro', (H. & W.)	1
Bethea, J. L., Northington,	1
Kennedy, Rev. W. W., Elizabeth City,	1
Whitaker, Col. Willis, Wake,	1
Wright, Richard W., Elkin,	1
Calloway, James, Wilksboro',	1
Perry, Baldwin, Louisburg,	1

INDEX TO AUGUST NO. 1856.

Antidote to Poison,	518
Amelanchier—new fruit,	534
Agriculture,	540
Bones, use of as a manure,	524
Black Teas,	542
Camels in Texas,	536
Carrots for Horses,	539
Cotton, short staple, culture of,	521
Cholera, opinions regarding cause,	528
Cotton, increase and consumption of,	532
Clover Hay, effects of,	535
Deep Plowing,	536
Domestic Manures,	538
Electricity, manufacture of steel by,	542
Early Rising,	539
Exhibition of the U. S. Agricultural Society,	537
Farming, first Principles of,	515
Farming, revolution in,	518
Farming, practical and scientific,	520

Feeding Milch Cows on Tomatoes,	533
Fruit,	534
Gooseberry-Mildew,	527
Guano, Artificial and Peruvian,	531
Grapes, Cheap Vinery,	533
Hussey's Reaper,	527
Hail Storms,	541
Improved Corn Planter,	536
Labels for Fruit Trees,	516
Lean Diet,	542
Milking Cows,	519
Measuring Corn in the Crib,	536
Machine for cutting down Corn Stalks,	536
Muck, Preparation of,	540
"My clover lot saved it,"	539
One of the Mothers of '76,	536
Our Receipt List,	537
Our State Fair,	537
Peaches, Description of,	513
Pneumonia in Hogs,	516
Poll Evil in Horses,	524
Produce, &c.,	541
Peaches, attention to,	542
Protection against Weevil,	539
Roller and its advantages,	519
Rotation of Crops,	530
Red Clover, try it,	540
Substitute for cream in tea or coffee,	542
Sheep Husbandry, encouragement of,	517
Snake Bite, cure of,	520
Soiling Crops—Barley, Millet, &c.,	525
State Shows,	528
Tillage, elements of good,	529
Texas, Editor's visit to,	540
To prevent rot in Potatoes,	539
To destroy Caterpillars,	539
Unknown resources coming out,	537
Under Draining, cheap way of,	516
Wheat—some,	536



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop known as JENKINS' OLD STAND, would announce to the people of North Carolina generally, that he is prepared to manufacture in a beautiful and durable manner, Coaches, Buggies, Rockaways and vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c., of every description, and as my facilities for repairing are good, the public may rely upon having their work done at the lowest possible rates, and in a manner unsurpassed by any other establishment in the State.

Give me a call and you will never regret it.
B. J. PERKINSON.

July 1st, 1856.

WYCHE'S CULTIVATING PLOW.

PATENTED 26TH FEBRUARY, 1856. (The Bladed Plow,) awarded \$20 premium at the last N. C. State Fair; with cutting blades in the place of a moldboard; cuts, divides and turns over the soil; depositing the finer parts in the furrow, and turning over the turf, clods, &c., on the surface. Is cheap, light, and lasting, and easy to both driver and team. Admirably adapted to almost any purpose for which the plow is used.

For license to sell, with further information, address
W. E. WYCHE.

Brookville, Granville Co., N. C.

J. H. Gooch, Oxford, N. C., solicits orders for the above plows.

June 16, 1856.

4-4tf.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the Mole Plow; with vertical cutters near the edge of a horizontal share, for dividing the furrow slice, and a curved cutter on the rear of the share for turning the whole in towards the plow, or as far on the opposite side of the share as may be desired. Adapted to siding, listing, breaking turfy or hard land, subsoiling, and many other purposes. Is light, cheap and strong; and supposed to be the most perfect pulverizer in use.

For license to sell, with directions for manufacturing, address
W. E. WYCHE,

Brookville, Granville Co., N. C.

June 16, 1856.

4-4tf.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES.



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day,
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

JOB WORK executed with neatness and dispatched at this office.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation
SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,
PUBLISHER,
BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

E. L. HARDING.

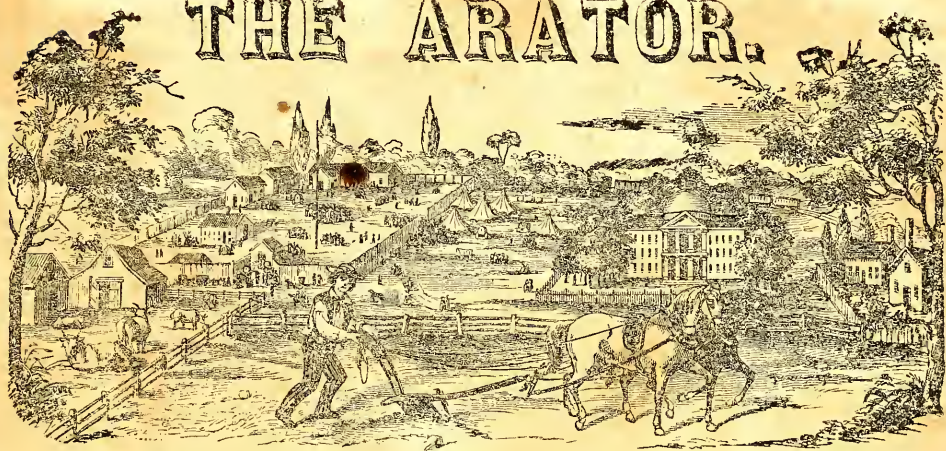
Clothing and Furnishing Goods.

NOW RECEIVING a large and desirable stock of SPRING AND SUMMER CLOTHING, with a well selected stock of Gents' FURNISHING ARTICLES. Our facilities for buying cheap, and having our goods made up under our own eye makes it an object for those in want to call and examine our stock. Cheap for cash.

Raleigh, March 26, 1855.

1-2

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.


VOL. II.


RALEIGH, SEPTEMBER, 1856.

NO. VII

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

 **TERMS.**—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

 **Advertisements,** not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

ON THE FUNCTION OF SALT IN AGRICULTURE.

By NATRIUM.

THE employment of salt in agriculture has been of late years so much extended, that the question of the advantages derived from its use, which formerly gave rise to so much discussion, can no longer be raised. Facts have accumulated, which establish beyond all question, that its application to certain lands does increase their fertility, and improve the character of the crops grown on them. In this state of the case, it is exceedingly desirable, that we should have as clear an idea as possible of the *rationale* of its action, so as to be able to determine definitely and certainly under what circumstances it may be advantageously employed.

With this view, Mr. A. Beauchamp Northcote, Senior Assistant in the Royal College of Chemistry, England, instituted a series of experiments which seem to throw some light on this somewhat obscure subject. We propose to give our readers an abstract of these, so far divested of scientific technicalities as to render them intelligible to all.

It has long been thought, that the beneficial action of salt upon soils is due to a power of fixing *ammonia*; and with this view, it has frequently been spread over the surface of dung-heaps, with the object of preventing the escape of the ammonia produced in the process of decomposition. In some cases, it appeared to have been more or less successful, while in others it has signally failed. The question of its absorption of the ammonia eliminated during these changes, is very difficult of investigation. That an admixture of salt with guano, retards the exhalation of ammonia from the latter, seems to be strikingly proved by the recent experiments of a well known French chemist. M. Barral exposed to the air, for fifteen days, equal weights of guano, and of guano previously mixed with half its weight of salt; the amount of nitrogen in each being determined at the end of that time, he found that the pure guano had lost 11.6 per cent. of its nitrogen, whilst that mixed with salt had lost only 5 per cent. This experiment may be considered decisive as regards the influence of salt in retarding the exhalation of ammonia, but it throws no light on the *modus operandi* of its action. In fact the most natural supposition is, that the antiseptic qualities of the salt retard the processes of decay by which ammonia is extricated.

Before entering upon his experiments, which are restricted to the absorption of ammonia, Mr. Northcote gives the analysis and table of constituents of three specimens of agricultural salt, calculated to 100 parts of the dry salt. This we append:

	No. 1.	No. 2.	No. 3.
Sulphate of lime,	4.155	1.197	1.440
Sulphate of magnesia,	.252	.336	.330
Sulphate of soda,	3.388	.880	1.734
Chloride of sodium,	90.342	97.106	94.287
Soluble in water,	98.127	99.519	97.791
Carbonate of lime,	.114	trace	.135
Carbonate of magnesia,	.079	.027	.077
Phosphate of Alumina,	trace	trace	trace
Alumina,	.026	.017	.472
Sesquioxide of Iron,	.161	.116	.319
Silica,	.792	.190	1.044
Organic matter,	.654	.130	.150
Insoluble in water,	1.826	.480	2.197
Total,	99.963	99.999	99.988

From this it will be seen, that other ingredients besides chloride of sodium enter in notable quantities into the composition of the salt which is used for agricultural purposes. This fact complicates the problem, by rendering it difficult to ascertain precisely what agency these impurities may have in the functions which have been ascribed to salt.

Since the ammonia which occurs in nature, whether eliminated directly from decaying organic matters, or existing in the atmosphere, is invariably in the immediate presence of an enormous excess of carbonic acid, Mr. Northcote concludes, that it is always in the state of *carbonate*; and as, on the one hand, it is brought down to the earth from the atmospheric regions dissolved in rain or dew, and, on the other, when met with in the soil itself, is usually in the presence of abundance of moisture, he infers that the carbonate of ammonia is presented to absorbent agents in the soil for the most part in a state of solution. Under this view, his experiments were performed with a solution of the commercial so-called sesquicarbonate of ammonia, containing 4.3 per cent. of ammonia.

Taking specimens of agricultural salt in the state in which they are supplied at the salt works, small quantities of the standard ammonia solution were added to the *solid* salts. No absorption of ammonia took place. When the salts were *dissolved* in water, the reality of the absorption was undeniable; and it was equally evident that the soluble portion of the salt contained the absorbing agents, since the disappearance of the ammonia bore a direct proportion to the completeness of their solution. It then became a question as to which of the constituents of the soluble portion, this agency was due.

The chloride of sodium being the largest ingredient, it was desirable to ascertain the part which it played in the matter. A saturated solution of the pure substance was prepared, and shaken with the solution of carbonate of ammonia. The following results were obtained:

Experiment.	100 grains of saturated solution of pure chloride of sodium will absorb
1.	.0324 grains of ammonia.
2.	.0233 grains of ammonia.
3.	.0292 grains of ammonia.
Mean	.0283 grains of ammonia.

Hence 100 grains of solid chloride of sodium in (in solution) will absorb

.1222 grains of ammonia
.0881 grains of ammonia.
.1097 grains of ammonia.

.1066 grains of ammonia.

Mr. Northcote satisfied himself that the absorbing power of the water in which the chloride of sodium was dissolved, was totally inadequate to produce the foregoing results; the quantity of water contained in the above 100 grains of saturated solution taking up only .0046 of a grain of ammonia.

But the amount of ammonia absorbed by this constituent, although really considerable, and of great importance in an agricultural point of view, did not correspond to the apparent absorbing power of the specimens of agricultural salt. The following *mean* results of three sets of experiments on three samples of agricultural salt, will place this in a striking light:

Experiment.	100 grains of solution of this salt will absorb
No. 1.	.1504 grains of ammonia.
No. 2.	.1334 grains of ammonia.
No. 3.	.1518 grains of ammonia.

Hence 100 grains of solid salt (in aqueous solution) will absorb

.6369 grains of ammonia.
.5003 grains of ammonia.
.5654 grains of ammonia.

As might have been anticipated, the addition of a solution of carbonate of ammonia to these salt solutions produces a precipitation of the lime which they contain. This must be attended with a corresponding fixing of the ammonia, the latter combining with the sulphuric acid to which the lime was previously

united. It was, therefore, possible that this reaction might account for the immediate difference between the absorbing power of these solutions and that of a solution of pure chloride of sodium. If this is the case, the absorbing power of the specimens, ought to be nearly in the ratio of the amount of lime salt, which exists in their soluble portion. The subjoined table will, however, show a discrepancy in this particular:

	No. 1.	No. 2.	No. 3
Sulphate of lime,	4.234	1.203	1.474
Sulphate of magnesia,	.236	.338	.336
Sulphate of soda,	3.452	.884	1.773
Chloride of sodium,	92.058	97.575	96.417
	<hr/> 100.000	<hr/> 100.000	<hr/> 100.000
Amount absorbed by 100 parts of solid salt (in solution,)	.6309	.5003	.5654

By comparing the quantity of sulphate of lime, which these specimens of salt respectively contain, with the amount of ammonia which they are capable of absorbing, we find no such proportionality as might be expected. But Mr. Northcote ascertained that this want of proportion arises from the *extreme insolubility* of the sulphate of lime compared with the other constituents of the salt; and fresh lime determinations in the solutions *actually employed* in the absorption experiments, showed, that notwithstanding the different composition of the three salts, the amount *actually existing* in the solutions prepared for experiment, was *very much the same*. The true amount of sulphate of lime contained in the solutions employed, as given in the annexed table, will be seen to present a very close coincidence between the per centage of lime-salt and of ammonia absorbed.

	No. 1.	No. 2.	No. 3.
Sulphate of lime, (determined,)	1.356	1.039	1.182
Sulphate of magnesia,	.264	.338	.337
Sulphate of soda,	3.555	.886	1.779
Chloride of sodium,	94.825	97.737	96.702
	<hr/> 100.000	<hr/> 100.000	<hr/> 100.000
Amount absorbed by 100 parts of solid salt (in solution,)	.6309	.5003	.5654

In accordance with this view, we ought to have an index to the absorbing power of a salt by a

knowledge of the quantities of chloride of sodium, and of soluble lime-salt which it contains, an equivalent of lime-salt fixing an equivalent of ammonia, and the chloride of sodium, the per centage which it has been shown to absorb. Applying this method to the samples under experiment, Mr. Northcote obtains the following results:

	No. 1.	No. 2.	No. 3.
Total amount absorbed by 100 grains of salt,	.6309	.5003	.5654
Deduct absorbing power of sulphate of lime,	.5187	.3973	.4519
	<hr/> .1122	<hr/> .1032	<hr/> .1135
Deduct absorbing power of chloride of sodium,	.1000	.1042	.1030
	<hr/> .0122	<hr/> *	<hr/> .0103

It will be seen that in Nos. 1 and 3, a slight excess of ammonia remains unaccounted for; this is, of course, partly due to the unavoidable excess which must be used in every experiment. But Mr. Northcote thinks, that at all stages of the process, there is a certain amount of counteraction going on, by which ammonia is again *liberated*; and which, he thinks, may be traced to the solubility of the carbonate of lime in the absorbing liquid.

The results at which Mr. Northcote arrives are:

1. That agricultural salt is a most euergetic absorbent of ammonia, both in virtue of its chloride of sodium and of its soluble lime-salt.
2. That the proportion of the lime-salt in solution most powerfully affects its action.
3. That its agency does not seem to be altogether a permanent one; it will collect the ammonia, but it is questionable whether it can retain it for any great length of time, because in the very decompositions which happen in rendering the ammonia more stable, salts are formed which have a direct tendency to liberate ammonia from its more fixed combinations. It may, however, retain it quite long enough for agricultural purposes; if the young plants are there ready to receive it, its state of gradual liberation may be for them the most advantageous possible; and to this conclusion all experiments on a large scale appear most obviously to tend. It is described as an excellent check to the too forcing power of guano; and from M. Barral's experiment we see that it either prevents the too rapid decomposition of the latter, or stores up the ammonia as it is formed. As a manure for growing crops, all experience and all theoretical considerations show it to be most valuable; but when employed to mix with manure heaps which have to stand for considerable periods of time,

theory would pronounce, as practice has in many cases done, that its power of retaining ammonia under those circumstances is at least doubtful.

There is another and totally different manner in which salts acts beneficially in agriculture, and particularly on lands liable to suffer from want of rain. We allude to its well-known *hygroscopic* property, which tends to retain the moisture in the soil. But, inasmuch, as the experiments under consideration, were restricted to the question of the absorption of ammonia, we forbear dwelling on the other functions of salt in agriculture.—*South Carolina Agriculturist*.

COMPARATIVE VALUE OF PEAT AND PEAT-CHARCOAL FOR AGRICULTURAL PURPOSES.

BY NATRIUM.

For the following results, we are indebted to a series of experiments made by Mr. Edmund W. Davy, of Dublin. In our abstract we shall endeavor to give the readers of this journal a clear idea of their nature, accompanied with such reflections as they may suggest.

At no former period has the importance of animal excrementitious matter to agriculture been so clearly understood as at present; while the growing attention which is now paid to the sanitary condition of towns, and the methods which have been discovered of deodorizing such matter, afford increased facilities of converting it into the most valuable manure.

Many substances, as chlorine, the chloride of lime and of zinc, &c., possess considerable deodorizing properties, and may, in certain cases, be usefully employed for sanitary purposes, but are quite unfit to be used in making manures from animal excreta, because they either decompose some of the most valuable constituents of those matters, or are injurious to vegetation.

The most important substances which have yet been proposed, both for deodorizing and the manufacture of manures from putrescent matter, are peat and peat-charcoal.

The deodorizing property of vegetable charcoal from whatever source, has long been known; but that of *uncharred peat* was first clearly ascertained by Prof. Davy—the father of our experimenter—and his statements have subsequently received the most ample confirmation from various sources. Peat, therefore, in its charred or uncharred state, may be used as a deodorizer for sanitary purposes, and it becomes little more than a question of expense which should be employed for this object.

A difference of opinion, however, is entertained whether peat or peat-charcoal is the better adapted to deodorize animal excreta, &c., where the object is to manufacture manures. The advocates for the use

of peat-charcoal allege, as one of the most important of its properties, that, when mixed with decomposing animal excreta, it absorbs and retains the ammonia which is evolved from such matter. If peat-charcoal really does this, it effects a valuable object, as the importance of ammonia as a food of plants and a fertilizer of the soil is well established.

With a view of throwing some light on this subject, Mr. Davy made some comparative experiments with peat and peat-charcoal on *stale urine*, which, by decomposition, had become highly ammoniacal. This urine was put into a well-stoppered bottle, and kept for the experiments. As peat from different localities differ in certain respects, he employed the same sods, charring one part of each, and leaving the other part uncharred. The peat, on being converted into charcoal in a close crucible, was, on cooling, immediately put into a dry bottle, and kept well corked. The uncharred peat was broken into pieces and placed into a similar bottle; and both, on being used, were reduced to the state of coarse powder, the particles of each being about the same size.—Having taken equal weights of the powdered peat and peat-charcoal, he put them into two similar evaporating dishes, and intimately mixing each with the same quantity of the ammoniacal urine, left the mixture exposed to the air for some days under an open shed, where they were protected from the rain. The proportions employed were 500 grains of peat or peat-charcoal, to six drachms by measure (or about 355 grains by weight) of urine.

Having previously determined by experiment how much ammonia was contained in a given quantity of the ammoniacal urine, after the mixtures had been exposed to the air for four days, Mr. Davy divided each into two equal parts, and ascertained the amount of ammonia present in one part of each, containing three fluid drachms of the urine.

The following are the quantities of ammonia furnished by the same amount of urine alone, and when mixed with peat and peat-charcoal, and treated in the manner described:

Amount of ammonia in three drachms by measure.

In the urine alone,	0.947 part of a grain.
“ “ with peat charcoal,	0.233 “ “ “
In the urine with peat,	1.105 “ “ “

These results show, that when the urine was mixed with peat-charcoal, and exposed to the air for only four days, it lost 0.714 part of a grain of ammonia, which is more than *three-fourths* of the entire quantity contained in the urine; whereas, in the case of peat, instead of there being any less of ammonia, there was a slight excess over that existing in

the urine alone, which is easily explained by the fact, that peat itself always contains a minute quantity of ammonia.

The following experiments were also made by Mr. Davy, which, it will be observed, confirm, in the most decided manner, the results just noticed. Having weighed 300 grains of peat, and of peat-charcoal, he carefully mixed each with half-an ounce by measure of same urine as that employed in the former experiments; and putting each mixture on a small saucer, placed it in a large plate holding some mercury, and having arranged a small tripod supporting an evaporating dish containing some diluted sulphuric acid of known strength over each mixture, finally covered the whole with a bell-glass—the mercury serving to exclude the air. At the end of five days, the bell-glasses were removed, and the acid contained in each evaporating dish was examined by Peligot's method. No ammonia could be detected in that placed over the peat, showing that none had been evolved, and that the peat had completely retained and fixed, as it were, the volatile carbonate of ammonia existing in the urine. On the other hand, in the case of the peat-charcoal, the acid indicated the absorption of 0.288 part of a grain of ammonia; or considerable more than one-fifth of the entire quantity existing in the urine of the mixture.

This last experiment was repeated, by mixing 500 grains of peat and of peat-charcoal with one fluid ounce of the same ammoniacal urine, and employing a similar arrangement as in the last, with the exception of using diluted hydrochloric instead of sulphuric acid, for absorbing the evolved ammonia.—After the mixtures had been left for sixteen days, the bell-glasses were removed, and it was found that the mixture with peat-charcoal had a slight urinous smell, and was still evolving ammonia, which was apparent both from its odor and its action on tumeric paper; whereas, the mixture with peat had no smell whatever, and no evolution of ammonia could be detected by means of tumeric paper. On evaporating to dryness the two acids placed over each mixture, Mr. Davy obtained, in the case of the peat-charcoal, a residue of 5.7 grains of hydrochlorate of ammonia, which is equivalent to 1.812 grains of ammonia, or just about *three-fourths* of the entire ammonia contained in the urine employed. This must have been evolved, and afterwards absorbed by the acid. On the contrary, in the case of the peat, there was an inappreciable residue, which gave but a slight indication of ammonia, thus showing that only a very minute quantity had been evolved.

The loss of ammonia in the case of the peat-charcoal in these two latter comparative experiments, is not so great in proportion, considering the time occupied, as in that of the former; but this is easily

explained by the surface exposed not being so large, and the experiments being made under bell-glasses, the same facilities for the evolution of ammonia were not present as when exposed to the open air.

These experiments show, that peat-charcoal (contrary to the statements of its advocates) has very little power of absorbing and retaining the ammonia of excrementitious matter when mixed with it; whereas, peat possesses this valuable property in an eminent degree, absorbing, and retaining it in the most striking manner. Mr. Davy thinks that this property is owing (at least in part) to peat containing some substance which acts the part of an acid in neutralizing and fixing the ammonia of the volatile carbonate; for he found, that when peat in certain proportions was mixed with urine which was highly alkaline (from the quantity of carbonate ammonia it contained) and the mixture filtered, the filtrate, though it contained ammonia, was quite *neutral* to test-paper, showing evidently that the ammonia of the carbonate had combined with some other acid to form a neutral salt. The evolution of ammonia, in the case of the peat-charcoal, seems to arise from two causes—namely, its inability to retain the volatile carbonate of ammonia existing in decomposing animal matter, and the property it possesses of decomposing, to a certain extent, the fixed salts of ammonia; as, for example, the sulphate, phosphate, muriate and urate, which may be present in such matter, and converting them into the volatile carbonate. This latter property would seem to depend on the alkaline and earthy carbonates formed during the process of charring; for when the charcoal was boiled for some time in diluted hydrochloric acid, and well washed with distilled water, so as to remove those salts, and again dried at a red heat, the power it possessed of decomposing the fixed salts of ammonia was greatly diminished, thus showing its connection with those substances. Peat, on the other hand, does not possess this property in the slightest degree. These facts prove the great superiority of peat over peat-charcoal for agricultural purposes, as regards the important substance ammonia; for, by means of peat it is retained more or less completely in the manure to exercise its fertilizing action on vegetation—whereas, peat-charcoal suffers it to be, in greater part, dissipated and lost.

The foregoing results and statements, as regards peat-charcoal, are contrary to what might have been anticipated from the experiments of De Saussure, and other chemists, who have shown that charcoal possesses the power of absorbing different gaseous substances, and particularly ammoniacal gas, in large proportion; but the circumstances under which they conducted their experiments, were very different from those in the experiments described by Mr. Davy.

The following table, containing the result of De Saussure's experiments, will give our readers some idea of this remarkable power of absorption in charcoal:

One volume of Boxwood Charcoal absorbed.

Ammoniacal gas,	90 volumes.
Hydrochloric acid gas,	85 "
Sulphurous acid gas,	65 "
Sulphuretted hyd. gas,	55 "
Carbonic acid gas,	35 "
Olefiant gas,	35 "
Carbonic oxide gas,	3.42 "
Oxygen gas,	3.25 "
Nitrogen gas,	7.50 "
Hydrogen gas,	1.75 "

De Saussure, when he ascertained that charcoal absorbed about ninety times its volume of ammoniacal gas, employed perfectly dry and very dense charcoal made from boxwood (the denser the greater its absorbent power;) and, in order that it might be as free as possible from air, heated the charcoal red-hot, and while in this state, plunged it under mercury, and thus cooled it, out of contact of the air, and afterwards let it up into gas. Such perfectly dry charcoal, and so free from air, could never occur in practice, and are not the conditions in which it is placed when used as a deodizer of animal excreta, &c.; for, in addition to its having absorbed much air and moisture from the atmosphere in spite of the most careful mode of keeping, it becomes more or less completely wet on mixing it with excrementitious matters—and the experiments of De Saussure show that the absorbing power is greatly impaired by the presence of moisture.

It appeared, however, interesting to Mr. Davy to ascertain what was the relative absorbent power of peat-charcoal, thoroughly dried peat, and of that in its ordinary state of dryness, for ammoniacal gas.—For this purpose he selected a good and tolerably dense sod of peat or turf, and having converted a part of it into charcoal, he made three small cubes of the same size—one out of the charcoal, and two out of the uncharred part, one of which was thoroughly dried by exposing it for many hours to a temperature of 212° Fahrenheit. The cube of charcoal, that it might be under the same conditions as to dryness and absorption of air as the cube of dried peat, was left exposed to the air for some time, and afterwards dried at 212° Fahrenheit. The third cube was left in its ordinary state of dryness, which was found, by drying another portion of the sod, to contain about 20 per cent. of water. These cubes were then let up into graduated receivers filled with

ammoniacal gas, standing over mercury, and the following are the results of their absorption, the volume of charcoal or peat being taken as unity:

Absorption of ammoniacal gas.

Peat-charcoal,	18.4 volumes.
Peat dried at 212° Fahrenheit,	33.2 "
Heat in ordinary state, containing 20 per cent. of water,	50.0 "

As the weight of the cube of peat-charcoal to that of the cube of dried peat in this experiment, was in the ratio of 13 to 16.6, the volume of ammoniacal gas absorbed by equal weights ought to be in the ratio of about 23.4 to 33.2.

These results show that the absorbent power of peat-charcoal for ammoniacal gas, even in a dry state, is very much over-rated, and is much less than that of dried peat, whether estimated by bulk or weight, and is far less than that of peat in its ordinary state of dryness.

As regards carbonic acid, the great food of plants, peat has a decided advantage over peat-charcoal, as the former readily undergoes decomposition in the soil, particularly if it is in contact with decomposing excrementitious substances, and gives rise to carbonic acid in the soil, both to supply the wants of the young plant before its leaves are sufficiently formed to obtain this indispensable substance from the surrounding atmosphere, and to render soluble in water certain earthy salts, &c., required by vegetation, and present them in a state in which they can be easily taken up by the roots of plants. Charcoal, on the contrary, from its being so little liable to undergo change, or be oxidized and converted into carbonic acid at the ordinary temperature, would, under the same circumstances, furnish only a very minute quantity of this gas, even after the lapse of a long period.

Peat, likewise, from its greater elasticity, is better calculated than peat-charcoal to improve the texture and render more pervious to the air heavy clay soils deficient in vegetable matter; and, besides, peat in the partially-dried and coarsely-powdered state in which it should be employed, would only be about *one-fifth of the expense of peat-charcoal*. All these circumstances conspire to prove that peat is greatly superior to peat-charcoal, in manufacturing manures for agricultural purposes.

This completes our review of the investigations of Mr. Davy; but before concluding this communication, we have thought it an appropriate opportunity of calling attention to some of the extraordinary properties of some of the impure forms of charcoal. The well known decolorizing property of *animal charcoal* has led to its extensive employment by the

chemist as well as the manufacturer, so that it is of the highest importance to know its precise action on the substances subjected to its influence. According to the experiments of M. Bussy, charcoal made by calcining dried blood, horns, hoofs, clippings of hides, &c., with carbonate of potash or chalk, possesses the most remarkable qualities. It frequently overcomes chemical affinities—a fact which should never be forgotten by the experimental chemist.—The experiments of Warrington, Garrod and Wepfen, prove that the salts of quinine, morphine, the organic bases and bitter principles, are carried down by charcoal in excess. It is probably in this manner that it acts as a general *antidote* to vegetable poisons; but its action is not confined to *organic* substances—even *inorganic* matters are frequently removed from solution. It acts in this manner on *arsenious acid*, lime, iodine, and the subsalts of lead. These results appear to be produced in *three* ways: 1. The salts are carried down unaltered; 2, the oxide is reduced; 3, it is deposited as a base. The foregoing facts are of the highest importance in a medico-legal point of view; for the toxicologist frequently employs animal charcoal for the purpose of decolorizing his solutions; and it should be borne in mind that radical chemical changes and re-actions may be in operation, which may vitiate his results.

South Carolina Agriculturist.

VALUABLE FACTS IN CHEMISTRY.

Acids and alkalis are to each other like negative and positive, and when mixed in equal proportions neutralize each other, and when neutralized are in equal proportions.

Acids change blue, purple and green color of vegetables into red; and neutralize alkalis and earth. The elementary principle is oxygen. There are 18 mineral acids, nine vegetable, and five animal.

Alkalis have the power of changing the blue vegetable juices to green, the green to yellow, yellow to orange, orange to red, and red to purple. Acids change vegetable blue to red. Chlorine destroys all colors.

Alkalies consist of ammonia, potash, soda, and lithia. The alkaline earths are lime, magnesia, barytes, and strontium. The neutral earths are silica, alumina, yttria, glucina, and zirconia.

100 of pure potash are equal to 70 of concentrated sulphuric acid, and thus they are mutual tests.

Ammonia is a compound of hydrogen and usually called volatile alkali. Davy, after galvanizing soda and potash, made an experiment to prove that there was oxygen in ammonia.

Davy, by compounding the galvanic elements with these alkaline earths, made substances which he called metals, as calcium, from lime, magnesium, bar-

ium, and strontium. These from their earthy base proved heavier than alkaline metals.

Bone in its solid parts is phosphate of lime organized by membranes, arteries, veins, lymphatics, and nerves, in a state of constant change, like the rest of the body. Madder in food stains bones, and abstinence restores them and the vessels so rapidly convey the matter of the bone, that in cases of necrosis or death of a bone, a new bone is formed as a case to the dead one, which may be taken away when the case becomes a perfect bone in all its functions.

Chlorine gas destroys the volatile effluvia of putrefaction and infection; and a solution of the chloride of lime is bleaching powder, and employed for that purpose. A tablespoonful, in a wine glass of water, spread on a plate, destroys all infection, and purifies the air of sick chambers, infected houses, and removes smells from drains, privies, &c.

THE CULTURE OF WHEAT.

THERE is no crop, the skillful and successful cultivation of which on the same soil, from generation to generation, requires more art than is demanded to produce good wheat. To grow this grain on fresh land, adapted to the peculiar habits and wants of the plant is an easy task. But such fields, except in rare instances, fail sooner or later to produce sound and healthy plants, which are little liable to attacks from the malady called "rust," or which give lengthened ears or "heads," well filled with plump seeds.

Having long resided in the best wheat-growing district in the Union, the writer has devoted years of study and observation to all the influences of soil, climate, and constitutional peculiarities, which affect this bread-bearing plant. It is far more liable to smut, rust, and shrink in some soils than in others. This is true in western New York, and in every other section where wheat has long been cultivated.—As the alkalis and other fertilizing elements become exhausted in the virgin soils of America, its crops of wheat not only become smaller on an average, but the plants fail in constitutional vigor, and are more liable to diseases and attacks from parasites and destructive insects. Defects in soil and improper nutrition lead to these disastrous results. Soils are defective in the following particulars:

1. They lack soluble silica, or flint in an available form, with which to produce a hard glassy stem that will be little subject to "rust." Soluble flint is never very abundant in cultivated soils; and after they have been tilled some years, the supply is deficient in quantity. It is not very difficult to learn with considerable accuracy the amount of silica which rain water as it falls on the earth will dissolve

out of 1000 grains of soil in the course of 8 or 10 days. Hot water will dissolve more than eold; and water charged with carbonic acid more than pure water, which has been boiled. The experiments of Professor Rogers of the University of Virginia, as published in Silliman's Journal, have a direct bearing on this subject. The researches of Professor Emmons of Albany, in his elaborate and valuable work on "Agriculture," as a part of the Natural History of New York, show that 10,000 parts of soil yield only from 1 to 3 parts of soluble silica. The analyses of Dr. Jackson, as published in his Geological Survey of New Hampshire, give similar results. Earth taken from an old and badly exhausted field in Georgia gave the writer only one part of soluble flint in 100,000.

What elements of crops rain water, at summer heat, will dissolve out of 10 or 20 lbs. of soil, in the course of three months, is a point in agricultural science which should be made the subject of numerous and rigid experiments. In this way, the capabilities of different soils and their adaptation to different crops may be tested, in connection with practical experiments in field culture, on the same kind of earth.

Few wheat growers are aware how much dissolved flint an acre of good wheat demands to prevent its having coarse, soft, and spongy stems, which are anything but a healthy organization of the plant. In the Journal of the Royal Agricultural Society of England, volume 7, there is an extended "Report on the Analysis of the Ashes of Plants," by Thomas Way, Professor of Chemistry at the Royal Agricultural College, Cirencester," which gives the results of 62 analyses of the ash of wheat, from as many samples of that grain, mostly grown on different soils and under different circumstances.

In this Report are given the quantity of wheat per acre, the weight of straw cut close to the ground on each acre, and also that of the chaff. These researches show, that from 93 to 150 lbs. of soluble flint are required to form an acre of wheat; and I will add from my own investigation, that three-fourths of this silica is demanded by nature during the last 60 days preceding the maturing of the crop. This is the period in which the stem acquires its solidity and strength, and most of its incombustible earthy matter. The quantity of this varies from 3 to 15 per cent. of the weight of the straw. Prof. Johnston and Sir Humphry Davy, give instances in which more than 15 per cent. of ash was found;—and Professor Way gives cases where less than 3 per cent. was obtained. The mean of 40 samples was $4\frac{1}{2}$ per cent. Dr. Sprengel gives $3\frac{1}{2}$ as the mean of his analyses. M. Boussingault found an average of 7 per cent. As flint is truly the *bone* of all the

grass family, imparting to them strength, as in cane, timothy, corn, oats, rye, rice, millet, and the proportion of this mineral varies as much in wheatstraw, as bone does in very lean and very fat hogs or cattle.

A young growing animal, whether a child or a colt, that is kept on food which lacks *bone earth*, (phosphate of lime, will have soft cartilaginous bones. Nature cannot substitute *iron* or any other mineral in the animal system, out of which to form hard strong bones; nor can any other mineral in the soil perform the peculiar function assigned to silica in the vital economy of cereal plants. To protect the living germs in the seeds of wheat, corn, oats, rye, barley, &c., the cuticle or bran of these seeds contains considerable flint. The same is true of chaff.

The question naturally arises,—How is the farmer to increase the quantity of soluble silica or flint in his soil? This is a question of the highest practical importance. There are three principal ways in which the object named may be attained. First, by keeping fewer acres under the plow. Land in pasture, if well managed, will gain in fertility, and in the process accumulate soluble silica in the surface soil. In this way more wheat and surer crops may be made by cultivating a field in wheat two years than four in six. If the field in the mean time be devoted to wool growing, butter or cheese making, or to stock raising, particular care must be taken to make great crops of grass or clover to grow on the land, and have all the manure both solid and liquid applied to its surface.

There are many counties in England that yield an average of 32 bushels of wheat per acre for ten crops in succession. There are but few of the old counties in the United States which average the half of that quantity; and yet our climate has greater agricultural capabilities than that of Great Britain.—This fact has been made abundantly evident in an article under the head of "Agricultural Meteorology."

Another way to increase soluble silica in the soil, is to grow such crops, in rotation with wheat culture, as will best prevent the loss of dissolved flint at any time by leaching and washing, through the agency of rain water. This remark is intended to apply more particularly to those large districts devoted to cotton and tobacco culture, plants that take up no considerable amount of silica, and which, by the constant stirring of the earth, and the clean tillage which they demand, favor the leaching of the soil. To keep too much of a plantation in these crops, is to lessen its capabilities for producing good crops of corn, wheat and barley, at a small expense. Corn plants, well managed, will extract more pounds of

silica in three or six months from the soil, than any other. As not an ounce of this mineral is needed in the animal economy of man or beast, it can all be composted in cornstalks, blades, and cobs, or in the dung and urine derived from corn, and be finally reorganized in the stems of wheat plants. Corn culture and wheat culture, if skilfully and scientifically conducted, go admirably together. Of the two, more bread, more meat, and more money can be made from the corn than from the wheat plant in this country. But so soon as what is called "high farming" in England, shall be popular in the United States, the crops both of wheat and corn grown here will demonstrate how little we appreciate the vast superiority of our climate for the economical feeding and clothing of the human family, over that of our "mother country." In several counties in England, it takes from 12 to 14 months to make a crop of wheat, after the seed is put in the ground. At or near the first of December, 1847, Mr. M. B. Moore, of Augusta, Ga., sowed a bushel of seed wheat on an acre and a half of ground, which gave him over 30 bushels by the middle of May following. This ground was then ploughed, and a fine crop of hay made and cut in July. After this, a good crop of peas was raised and harvested in October, before it was time to seed with wheat again, as was done.

While the mean temperature of England is so low, that corn plants will not ripen, in Georgia one can grow a crop of wheat in the winter, and nearly two crops of corn in succession in the summer and autumn, before it is time to sow wheat again. No writer, to my knowledge, has done full justice to the vast agricultural resources of the southern portion of the American confederacy.

But there is much of its soil which is not rich in the elements of bread. Nothing but the careful study of these elements, and of the natural laws by which they are governed, can remedy defects in wheat culture anywhere, but especially on very poor land.

All alkaline minerals, such as potash, soda, lime, ammonia, and magnesia, hasten the solution of the several insoluble compounds of silica in the soil. This fact should be remembered by every farmer. To undertake an explanation of the various ways in which alkalies, oxides, and acids act and react upon each other in the surface of the earth, when subject to tillage, would be out of place in this outline view of wheat-growing in the United States. I may state the fact, however, as ascertained by many analyses, that a cubic foot of good wheat soil in the valley of the Genesee,

contains 20 times more lime than do the poorest soils in South Carolina and Georgia. The quantity of gypsum, bone-earth, and magnesia, available as food for plants, varies in an equal degree.

Not only lime, but phosphoric acid, potash, and magnesia are lacking in most soils, if one desires to raise a large crop of wheat, and have the seeds of the grain weigh as much as the straw. In a number of the specimens of wheat analyzed by Professor Way, when cut close to the roots, the dry wheat outweighed the dry straw.

Having secured the growth of a bright, hard, glassy stem, the next thing is to develop a long, well-filled ear. To this end, available ammonia or nitrogen, phosphorus, potash, and magnesia are indispensable. Ammonia (spirits of hartshorn) is necessary to aid in forming the combustible part of the seed. The other ingredients named are required to assist in making the incombustible part of the grain. In 100 parts of the ash of wheat, there are the following substances, viz :

Silica,	2.28
Phosphoric acid,	45.73
Sulphuric acid,	0.32
Lime,	2.06
Magnesia,	10.94
Peroxide of iron,	2.04
Potash,	32.24
Soda,	4.06
Chloride of sodium.	0.27
Total,	99.94.

The quantity of ash in wheat varies from $1\frac{1}{2}$ to $2\frac{1}{2}$ per cent.; the average is about 1.69. The amount of phosphoric acid in any given quantity of the ash of wheat varies from 40 to 50 per cent. of the same.

Seeds that have a thick cuticle or bran, and little gluten, contain a smaller per centage of phosphoric acid, and more silica. About one-third of the ash is potash; in nearly all cases magnesia varies from 9 to 14 per cent.; lime from $1\frac{1}{2}$ to 6 per cent. Peroxide of iron is seldom as abundant as in the ash above given, and the same is true of soda. Chloride of sodium is common salt, and exists in a small quantity. Salt is beginning to be much used as a fertilizer on wheat lands in western New York. It operates indirectly to increase the crop.

The following may be taken as about the average composition of the ash of wheat straw. It is "Specimen No. 40," in the tables of Professor

Way, and I copy verbatim all that is said on the subject: [Soil, sandy; subsoil, stone and clay;—geological formation, silurian; drained; eight years in tillage; crop, after carrots, 20 tons per acre; tilled December, 1845; heavy crop; mown, August 12th; carried, August 20th; estimated yield, 42 bushels per acre; straw long, grain good, weight 62 lbs. to the bushel] Length of straw, 42 inches.

Relation of Grain, Straw, and Chaff.

	Actual quantities.	Per centage.
Grain,	1633 lbs	45.15
Straw,	1732 "	47.89
Chaff,	250 "	6.96

Total,	3615 lbs.	
Specific gravity of grain,		1.396
Weight of grain per acre,		2604 lbs.
Weight of straw per acre,		2775 $\frac{3}{4}$
Weight of chaff per acre,		401 $\frac{1}{2}$

Mineral Matter in an Acre.

Wheat,	44 $\frac{1}{2}$ lbs.
Straw,	113
Chaff,	47 1-5
Total,	204 7-10

Analysis of the Ash of the Grain.

	Per centage.	Removed from an acre.
Silica,	5.63	2 lbs. 8 oz.
Phosphoric acid,	43.98	19 " 8 "
Sulphuric acid,	.21	0 " 1 1-5 oz.
Lime,	1.80	0 " 12 8-10 "
Magnesia,	11.69	5 " 3 2-10 "
Peroxide of iron,	.29	0 " 2 oz.
Potash,	34.51	15 " 5 6-10 oz
Soda,	1.87	0 " 13 3-10 "
	99.98	44 lbs. 6 1-10 oz.

Analysis of Straw with its proportion of Chaff.

	Per centage.	Removed per acre.
Silica,	69.36	111 lbs. 1 7-10 oz.
Phosphoric acid,	5.24	8 6 7-10 "
Sulphuric acid,	4.45	7 2 2-10 "
Lime,	6.96	11 2 2-20 "
Magnesia,	1.45	2 5 "
Peroxide of iron,	.29	1 2 "
Potash,	11.79	18 14 "
Soda,	none.	none.
Chloride of sodium,	"	"
Total,	99.54	160 lbs. 1 1-10 oz.

If we subtract the 111 pounds of silica from the 160 pounds of minerals in the straw and chaff, the difference between what are left and those in wheat, is not great. As the stems and leaves of wheat plants grow before their seeds, if all the phosphoric acid, potash, and lime available in the soil is consumed before the organization of the seeds begins, from what source is nature to draw her supply of these ingredients to form a good crop of wheat? If the farmer could reverse the order of nature, and grow a good supply of seeds first, and make straw afterwards, then many a one would harvest more wheat and less straw. But the cultivator must grow the stems, roots, and leaves of wheat, corn, and cotton, before nature will begin to form the seeds of these several plants; and every one should know that the atoms in the soil, which are consumed in organizing the bodies of cultivated plants, are, in the main, identical in kind with those required to make their seeds.—The proportions, however, differ very considerably. Thus, while 100 parts of the ash of wheat contain an average of 45 parts of phosphoric acid, 100 of the ash of wheat-straw contain an average of only 5 parts. The difference is as 9 to 1. In magnesia the disparity is only a little less striking.

In what are called the organic elements of wheat (the combustible part) there are seven times more nitrogen in 100 pounds than in a like weight of straw. Hence, if the farmer converts straw into manure or compost, with the view ultimately of transforming it into wheat, it will take 7 pounds of straw to yield nitrogen enough to form one pound of wheat. Few are aware how much labor and money is annually lost by the feeding of plants on food not strictly adapted to the peculiar wants of nature in organizing the same. It is true that most farmers depend on the natural fertility of the soil to nourish their crops, with perhaps the aid of a little stable and barn-yard manure, given to a part of them. As the natural resources of the land begin to fail, the supply must be drawn from other quarters than an exhausted field, or its cultivator will receive a poor return for the labor bestowed.

In Great Britain, where the necessity for liberal harvests and artificial fertilizing is far greater than in this country, the yield of wheat is said to be governed in a good degree by the amount of ammonia available as food for growing plants. This opinion is founded not at all on theory, but altogether on the teachings of experience. But in England, liming and manuring are so much matters of constant practice, that few soils are so im-

poverished as many are in the United States.—With land as naked and sterile as is much that can be found in the old thirteen colonies between Maine and Alabama, English farmers could hardly pay their tithes and poor rates, to say nothing of other taxes, rent, and the cost of producing their annual crops.

The first step towards making farming permanently profitable in all the older States, is to accumulate in a cheap and skillful manner the raw material for good harvests, in the soil.

Over a territory so extensive as the United States, it is extremely difficult to lay down any rule that will be applicable even to a moiety of the republic. There are, however, many beds of marl, greensand, gypsum, limestone, saline, and vegetable deposits, available for the improvement of farming lands, in the Union. In addition to these, there are extraneous resources, the ocean with its fish, its shells, its sea-weeds, and its fertilizing salts which will yield an incalculable amount of bread and meat. In the subsoil and the atmosphere, every agriculturist has resources which are not duly appreciated by one in a thousand.

As a general thing, the soil must be *deepened* before it can be permanently improved. One acre of soil 12 inches deep is worth more to make money from, by cultivating it, than four acres 6 inches in depth. Thus, admit that a soil 6 inches deep will produce 14 bushels of wheat, and that 12 bushels will pay all expenses and give 2 for profit.—Four acres of this land will yield a net income of only 8 bushels. Now double the depth of the soil and the crop: making the latter 28 bushels, instead of 14 per acre, and the former 12 inches deep, in the place of 6. Fifteen bushels instead of twelve, will now pay all annual expenses, and leave a net profit not of *two* but of *thirteen* bushels per acre. If small crops will pay expenses, large ones will make a fortune; provided the farmer knows how to enrich his land in the most economical way. It is quite as easy to pay too dear for improving lands, as to lose money at any other business whatever.

The first thing for the operator to do is to acquire all the knowledge within his reach, from the experience of others who have done for their soils what he proposes to accomplish for his. Twenty or fifty dollars, invested in the best agricultural works in the English language, may save him thousands in the end, and double his profits in two years. The Agricultural Journals of the United States abound in information most useful to the practical farmer; and the back volumes, if collected and bound, will form a library of great value.

Rotation of Crops in connection with Wheat Culture.

A system of tillage and rotation which will pay best in one locality, or on one quality of soil, and in a particular climate, will be found not at all adapted to other localities, different soils and latitudes. Hence no rule can be laid down that will meet the peculiar exigencies of a farming country so extensive as the thirty States east of the Rocky Mountains. There are soils in Western New York, known to the writer, which have borne good crops of wheat every other year for more than twenty years, and produce better now than at the beginning of their cultivation. The resources of the earth in supplying the elements of wheat and corn are extremely variable. There are friable shaley rocks in Livingston county, N. Y., which crumble and slake when exposed to the air, that abound in all the earthy minerals necessary to form good wheat. These rocks are hundreds of feet in thickness, and have furnished much of the soil in the valley of the Genesee. The Onondaga Salt Group and other contiguous strata, which extend into Canada West, form soils of extraordinary capacity for growing wheat. Indeed, the rocks and "drift" of a district give character to its arable surface.

Nothing is more needed at this time than a good geological map of the United States, accompanied by an accurate and popularly arranged work on agricultural geology. The writer had hoped to give such a map in this report; but it is thought best to devote another year to the collection of geological surveys and facts, and to the making of more critical and extended researches before publishing.

In the matter of rotation of crops in connection with wheat culture, clover and corn are generally preferred in all the Northern, and most of the Middle States. In New York, Ohio, Pennsylvania, Michigan, Wisconsin, Northern Indiana, and Illinois, so far as the writer is acquainted, a crop of wheat is made in rotation, either every third, fourth, or fifth year. Wherever wool growing is united with wheat culture, clover and wheat are the staple crops of the farm. Wool and superfine flour are exported; farmers taking nearly all the bran and shorts of the millers who purchase their wheat.

The offal of wheat makes not a little feed with chaff and cut straw. Many agriculturists grow peas, beans, turnips, beets, and carrots in large quantities, as well as clover, corn, oats, and bar-

ley. Peas and beans, both vines and seeds, when well cured, are excellent feed for sheep; and on good land they are easily grown. They fit the soil well for wheat.

All the manure derived from sheep is husbanded with extreme care by farmers who are gradually enriching their lands. On a deep, rich, arable soil, quite a number of sheep may be kept per acre, if highly cultivated; and their manure prepares the land for producing generous crops of wheat at a small expense. Of all business men, farmers should be the closest calculators of *profit and loss*.

Great care should be taken to sow good and clean seed on clean land. Previous to putting the seed in the ground (drilling is preferable to sowing broadcast) wheat should be soaked five or six hours—not longer—in strong brine. After this, add a peck or more of recently slaked lime to each bushel, and shovel it over well, that the lime may cover each seed. It is now ready to commit to the earth. Most good farmers roll the earth after seeding; some before.

In the Southern States, planters are in the habit of permitting their wheat to remain too long in the field after it is cradled, and in small shocks. Good barns are too scarce in all the planting States, and in some others.

Summer Fallowing is generally abandoned, except in cases where old pastures and meadows, new prairie, or bushy bad fields are to be subdued. As a general rule, friable soils need not be plowed long before the intended crop is expected to begin to grow. Among fertilizers, wood ashes, salt, bones, lime, guano, and poudrette have been used in wheat culture with decided advantage. In Great Britain, manure derived from the consumption of turnips and other root crops by sheep and neat cattle, is much used in preparing land for wheat. Sheep, clover and peas, corn and hogs, *rotate* well to insure the economical production of this staple. Manure is usually applied to the crop preceding wheat.

It may be interesting to some readers to see in this place the mean result of several organic analyses of wheat made by M. Boussingault. Wheat dried at 230° degrees *in vacuo*, was found to contain:

Carbon,	46.1
Oxygen,	43.4
Hydrogen,	5.8
Nitrogen,	2.3
Ash,	2.4

Total,	100.0
--------	-------

Charcoal may be regarded as a fair representative of *carbon*, and water as the representative of both oxygen and hydrogen. It will be seen by the above figures, that over 95 per cent. of wheat is made up of elements which greatly abound in nature in an available condition; and the same is true of all other plants. It is doubtless owing to this circumstance, that a comparatively small quantity of guano and other highly concentrated fertilizers are able to produce crops five, ten, and fifty times greater than their own weight. *Azote, or nitrogen, in the form of ammonia, or nitric acid, (aqua fortis,) and the incombustible part of plants are the elements which least abound in soils, and should be husbanded with the greatest care.

MODE OF KEEPING PIGS IN MEXICO.

"FIVE breeds of these useful animals are kept by many persons of wealth as an article of trade, in the city of Mexico; and the care and attention paid to their cleanliness and comfort, so far exceed any thing I have seen elsewhere, that a short account may be useful by furnishing hints to our farmers, brewers, distillers, &c., by whom large numbers of these could be, and are conveniently kept. The premises where the business is carried on are extensive, consisting in general of a good dwelling house, with a shop, slaughter-house, and places for singeing the pigs, large bowls for rendering the lard, salting and drying rooms, and lard rooms, with wooden bins for containing the rendered fat, which is an article of great consumption in Spanish cookery, being used as a substitute for butter. There is also a soap manufactory, in which the offal fat is manufactured, and apartments where the blood is made into a kind of black-pudding and sold to the poor. Behind all these are the sties for the hogs, generally from eight hundred to one thousand in number, which occupy a considerable range of well-built sheds, about thirty feet deep, with the roofs descending very low, and having the entrance through low arches, before which is an open space, the whole length of the yard, and about twenty-four feet wide, in the centre of which is a kind of aqueduct built of stone, and filled with clear water, supplied from a well at the end of the premises. The hogs can only put their noses into this water through holes in the wall, which prevents their dirtying it, as it passes through the whole division of the yard. This is the only liquid given them, and their food is maize or Indian corn, slightly moistened, and scattered at stated hours on the

ground, which in the yard, as well as the place where they sleep, is kept perfectly dry and clean. They are attended with every possible care.—There is a cold bath on the premises, which they are attended frequently to use, as cleanliness is considered essential to their acquiring that enormous load of fat from which the principal profit is derived. Their ease and comfort seem also in every respect to be studiously attended to; and the occupation of two Indian lads will cause a smile on the countenance of my musical readers, when they are informed that they are employed from morning till night in settling any disputes or little bickerings that may arise among the happy inhabitants of the community, either in respect to rank or condition, and in *singing them to sleep*. The boys are chosen for the strength of their lungs, and their taste and judgment in delighting the ears, and lulling the senses of this amiable harmonic society; they succeed each other in chanting during the whole day, to the great delight and gratification of their bristly audience, who seem fully to appreciate the merits of the performers.—*Youatt on the Pig.*

COWS FOR THE DAIRY.

THERE are certain points in a milker, that can hardly be mistaken. She should be descended from the best milking stock; her head should be small of medium size, muzzle fine, and nostrils expanded and flexible; face long, slender and dishing, cheeks thin; eyes full, mild and prominent; horns delicate and waxy, and they may be either branching, lopped, crumpled or hornless;—long, thin, lively ear, and the inside of an orange color; neck thin and small at its junction with the head; deep chest, but not too heavy before; back level and broad; well ribbed; belly large; low flanked; wide thighs, but thin; short legs, and standing well apart; large milking veins; loose capacious udder, coming well out behind; good teats; loose mellow skin, of a deep yellow; and a fine, thick coat of glossy hair; and she must be of a good disposition, and perfectly free from tricks.

Yet, with all the skill of a well-practiced taste in the selection of animals, the dairy-man will frequently find his theories and results at sad variance. One may sometimes select a fine animal, with every appearance of good milking qualities, which is but a medium cow at the pail; another, that hardly seems worthy of notice, and which sets at defiance many established milking points, and all preconceived notions of symmetry, may yet be a good milker. A cow that runs to flesh, while in

milk, is generally an indifferent animal for the dairy. Perfection in a cow consists in converting all she eats into milk while yielding it, and when dry, in turning all she consumes into valuable meat. •

R. L. ALLEN.

HINTS IN FEEDING MILCH COWS.

THOMPSON, in his work entitled "Experimental researches on the food of animals," says that the cow, if fed for two days on an insufficient quantity of food as indicated by loss of weight, and diminution of milk, will require at least double that time to reach the condition from which it deteriorated, and the reason of this is obvious, because the partial starvation has caused it to lose a portion of the substance of its body, which requires a longer time to re-establish than to pull down.

This rule, he says, is applicable to the dietary of men as well as to inferior animals. An increase of labor should always be accompanied with an increase of food, both at sea and in prison. A short walk, for one confined in a solitary cell, calls for some augmentation of food. A slight increase of temperature, or the irritating influence of insects, will effectually diminish the milk of a cow, and indicates the propriety of increasing the amount of fodder.

During his experiments on feeding milch cows, he found that the milk of one day was derived from the food eaten the day previous, and that it takes at least sixteen hours for the digestive organs of the cow to fully take up all the nutritive matter which she feeds upon.

EXTRAORDINARY TOBACCO BED.—Jno. Henry, Esq., of Charlotte Co. Va., gives to the Petersburg Southern Farmer, the following plan for preparing a tobacco bed:—On the 14th of April last I burnt and prepared a plant bed for tobacco plants in a rich glade in the forest, and on the 15th of April sowed the same, raking in the seed which had previously been soaked for 24 hours, and treading the bed. I then put on the surface a dressing of fresh stable manure dry, and covered it with brush. I put on afterwards dressings of dry rotted hen manure, and dry fresh stable manure, three different times. On the 16th of June, after a good rain, I took off the brush and drew from the patch the following supplies of plants for planting:—June 6th and 7th, 37,500 plants; June 9th, 40,000 plants; June 12th, 35,000 plants; June 17th, 18,000 plants; June 26th, 40,000 plants left in the patch—making in all 170,500 plants. No guano was used on the patch."

THE SHEEP OF GREAT BRITAIN.

LINCOLNSHIRE AND COTSWOLD.

THE Lincolnshire is the largest breed of sheep in Great Britain. According to Ellis, the oldest agricultural writer by whom any description of them is given, they were "the longest-legged and largest-carcased sheep of all others, and carried more wool on them than any sheep whatsoever." For many years there was considerable rivalry between the breeders of Lincoln and Leicester sheep; the former, it was claimed, giving more wool of better quality, and the latter the most mutton.—At length, says *Yonatt*, a union was established between them; a Lincoln ewe was put to a Leicester ram, and the progeny certainly displayed, and to a very great and profitable extent, the excellence of the male parents. The wether attained its maturity a full year sooner than it was accustomed to do, and with less comparative expenses of food even at that time; and when the ewe was drafted, she too was sooner ready to be sent to market, and weighed considerably more than she was wont to do, and was in higher repute and more readily sold. :

Mr. Clark, of Canwick, in 1827, exhibited two wether sheep in Lincoln market, the fleece of which had yielded each 12 lbs. of wool. They were slaughtered, and the carcass of the larger one weighed 261 lbs.; the fore-quarters were each of them 73 lbs., and the hind quarters 57½ lbs. On the top of the rib the solid fat measured nine inches in thickness!

By judicious breeding, and by means of the improved system of turnip husbandry, and high feeding, the sheep are now rendered fit for market at one year old, and weigh from 80 to 100 lbs. each, on the average. When kept till two years old, they are very heavy. Thus, three slaughtered a few years since, aged respectively three, two, and one year old, weighed 386 lbs., 364 lbs., and 284 pounds.

COTSWOLDS.—The meaning of the name Cotswold, is a sheep-fold, and a naked hill or plain.—The Cotswold hills, the native tract of this ancient breed of sheep, are of moderate elevation, covered with sweet and nutritious herbage: and though formerly a bleak, wild, and uncultivated district, given wholly to sheep walks, it is now enclosed, cultivated, and greatly improved. The sheep have also undergone a like improvement; so that they now rival the New Leicester in symmetry and early maturity, while they possess a heavier fleece and

carcass. They have been crossed with the Leicester with decided advantage, their size and fleece being slightly reduced, but their tendency to fatten and early maturity, as well as the quality of the mutton, are much improved. They have also been crossed with the Hampshire Downs, thereby improving still more the quality of the mutton, but greatly reducing the weight of wool and carcass.

The experiments at Rothamstead show that for the food consumed the Cotswolds increase in weight more rapidly than any other breed.

The Cotswolds, especially in the Southern States, have been pretty extensively introduced into this country, and are yearly becoming more and more popular. There are a few in the Northern States and in the Canadas, and they stand the climate equally as well as the Leicester and South Down. They are known in some parts as the New Oxfordshire. Their weight of carcass and fleece has been well sustained in this country. Mr. Reybold of Delaware, has killed Cotswold wethers weighing 200 lbs. dressed, and they frequently weigh from 30 to 40 lbs. per quarter.

In England, the Cotswold is called the "poor man's" sheep, because their mutton can be produced cheap. In London, Cotswold mutton sells at from two to three cents per pound less than the South Down. But the Cotswold increases, for the food consumed, enough more to make up the less price obtained; and it is an open question which is the more profitable breed. In this country, at present, Cotswold mutton probably sells as high as South Down, and therefore Cotswolds must be the more profitable breed. The time, however, will come when consumers will be more discriminating.

QUANTITY OF WOOL FROM DIFFERENT KINDS OF FOOD.

WE find in the London Journal of Arts of August 31st, 1855, a statement of the amount of wool produced by feeding weighed quantities of various kinds of food. The results given are from one set of experiments, and they probably vary materially from what might be obtained under other circumstances: still they are instructive:

1,000 lbs.	Pounds of Wool.
Mangel Wurtzell, raw, produced	5½
Potatoes raw, with salt	6½
Oats, raw	10
Buckwheat,	10
Barley	12½

Rye, without salt	12½
Rye, with salt,	14
Wheat, raw	14
Peas	16½

We have not the method of feeding the above in each case, which leaves the table a little imperfect. The difference in the result of feeding rye with and without salt is interesting. The superior value of peas might be looked for, from their chemical composition.

ON THE USE OF GUANO.

H. K. BURGWYN, Esq., of North Carolina, in making a correction in a statement published in the Southern Farmer, makes the following remarks:—"Allow me to correct your report of the first resolution of the Guano Convention recently convened at Washington. Your report reads that the Convention resolved it would "continue negotiations with the government of Peru," &c., &c.—The resolution really offered and carried, you will find embodied in the address to the President herewith enclosed. Allow me to add, it was the almost universal opinion of the members of the Convention that, to use an Irishism, the *use* of guano had been greatly *abused*. It was stated by several gentlemen that in many parts of Delaware and Maryland the whole wheat crop made would not pay for the guano used on the land! This is truly a most lamentable account, and shows that many of us are working for the benefit of the government of Peru and its employees, and not for ourselves, the action of Peruvian Guano is so very uncertain. I have been using it more or less for ten years, and three times during that period I have lost heavily. This year, being induced by the high price of grain, I bought largely, now and at the harvest, I confess to a contribution of \$1200 to the support of the Peruvian Government, for that amount is certainly lost to me and my heirs "forever." I should observe that application was made precisely as it had been the year previous, when I made a considerable increase of crop, which the high price of wheat made a heavy profit on the investment. With wheat at \$1.20 the profit would have been but little. In conclusion, I will add that my own experience and all that I could gather at the Convention, brings me to the conviction that the best and only safe way to use the Peruvian guano is to use about 50 or 75 lbs. per acre, to be distributed with the drill for wheat;—and about the same quantity freely mixed just

before application, with good loam in the hill, at corn planting. For cotton or tobacco, I have never tried it.

Respectfull your obedient servant,

H. K. BURGWYN.

Thornbury Plantation, near Halifax, N. C., July 1st, 1856.

LETTER ABOUT "HUANO."

WASHINGTON, MAY 17, 1856.

THE enclosed letter from Mr. Clay, the able and efficient Minister of the United States at Lima, may be interesting to the planters and farmers of Virginia. Will you give it a place in the Enquirer, as the best mode of bringing it before them?

Very respectfully yours,

J. M. MASON.

LEGATION OF THE U. STATES, }
LIMA, April 11, 1856. }

To the Hon. James M. Mason, &c., &c.

DEAR SIR:—After endeavoring for several years past to obtain accurate information of the manner in which Huano is employed by the farmers (chaereros) in the environs of the city of Arequipa, which is the principal district in Peru where that manure is used in cultivating the land, I have been favored with the following statement. Knowing the great interest you take in the agricultural prosperity of our country, and of your native State in particular, I take the liberty of transmitting to you the result of my inquiries, which, though not very full, may nevertheless be useful to the planters and farmers who manure their lands with huano:

"Huano is brought from the China Islands to Islay, and there sold to the chaereros (Farmers) round Arequipa, and is there sold at from four to six reals (50 to 75 cents) the fanego. The fanego weighs five arrobas or about 125 lbs. The price varies from 4 to 6 reals; the latter price is asked at present. This would make the English ton worth about \$13, or say £2.10 in Islay.

"It is applied to *two crops only*—Indian corn and potatoes—carefully by the hand.

To Indian corn, when the plant is about two months old, and, say, 24 inches high. One half handful is applied near each root—a large quantity is said to be prejudicial by 'burning' the plant. The huano is then covered with earth, and a small quantity of water applied by irrigation to 'fix the huano.' If the state of the soil does not

absolutely require it, no more water is applied until after six or eight days.

"The quantity calculated for each topo of 5,000 square varas, say $1\frac{1}{2}$ acres, is 4 fanegas, or about 500 lbs.

"For Potatoes, the quantity required is the same, and applied in the same manner as regards the age of the plant, and a small quantity of water '*to fix the huano*.' The stalk of the potato is then about eight inches in height, and the earth heaped up in ridges, the same as in Great Britain. The laborer inserts a spade in the top of the ridge beside each plant, whilst a woman follows pouring a handful of huano into the opening thus made, and covers it up with earth; so that the ridge remains the same as before the application of the huano.

"To Wheat, the application of huano is not approved of, principally on account of the rankness it produces in the stalk, thereby delaying the ripening of the grain—a point of great importance in a land where they count upon obtaining two crops in a year."

If huano should be used in the cultivation of tobacco in Virginia, I presume it should be applied to the plants after having been transplanted into hills, much in the same manner as potatoes are treated in the environs of Arequipa.

Should I succeed in obtaining any further hints, I shall take the liberty of communicating them to you; and if any inquiries should suggest themselves to you in relation to this subject, I shall feel great pleasure in answering them as fully as may lie in my power.

In the meantime, I remain, dear sir,

Very respectfully, your obed't. serv't,
J. RANDOLPH CLAY.

WHEAT AND PEAS.

An esteemed correspondent in Georgia, says: "I read your account of a visit to Mr. Hewlett's farm, with great interest. The pea is yet unappreciated as a fertilizer, especially for wheat; but it is the Boanerges of the South, as clover is for the North. I think your readers would have liked a more full explanation of Mr. Hewlett's mode of turning the vines under, &c. You cannot write a line about the pea which won't do good."

With reference to the crop of wheat on the Experimental Farm, near Petersburg, Mr. Nichol, has reported, as we learn from the Southern Farmer, the following fact: "That portion of the crop following what in our vicinity is called pea fallow,

suffered no perceptible injury from the ravages of the fly. That which was seeded on corn land suffered considerably from this cause, while that which followed buckwheat was very seriously injured."—"If on pea fallow" says the *Farmer*, "it shall be generally ascertained that the wheat is exempt from this sore evil, this mode of preparation is destined to be soon very extensively practiced."

The fact is one of much interest as to the exemption of the pea-fallow from fly. We expect to see more facts to the same purpose, and will give our readers a reason of this hope.

We do not believe that there is virtue in the pea to repel the fly, or that there is any specific which now or hereafter will exempt the wheat crop from fly and rust, and other evils which attach to it, just as naturally as "the ills that flesh is heir to," cling there. But we have great faith in a *sound natural constitution, and a due observance of the laws of health*, whether in man, beast or plant, as the very best and only protection against natural enemies. Believing that the pea-fallow is probably the best known method of preparing land for a healthy, vigorous development of the wheat plant, we say we expect to see more facts showing its comparative exemption from fly.*

* Since writing the above we see that a correspondent of the Richmond Whig writes, that his wheat dressed with two hundred and fifty pounds of Guano was very much injured by fly, and that that sown on pea-fallow was far superior to it.

American Farmer.

OXEN VS. HORSES.—The "Wool Grower" says that "the plowing matches throughout the country have established the fact, that oxen can plow a given space of ground as *quick* and as *well* as horses." We do not know how this may be, but we do know a gentleman who puts a yoke of Devon oxen to a plow, immediately behind a team of three good horses, and they do the same days work of plowing that the horses do. They are stabled and curried and fed like horses, and do all the work required of them with as much spirit.

FROM HANOVER CO., VA.:—"Our crops of wheat are short in Eastern Virginia, except in a few localities—say three or four counties in the Piedmont District of our State. Fly, joint-worm, chinch bug and drought, superadded to a hard winter, are the causes of the failure of the crop. The most of us are at a stand, and hesitating whether it will be a paying investment to purchase guano at current rates."

THE APPLICATION OF LIME.

A WELL-KNOWN Virginia farmer, who is generally "down" on everything having any affinity to agricultural chemistry, writes us as follows:

"I respect your *science* more than I do that of most agricultural editors, and am about to prove my sincerity by asking you, without alluding to me, however, to write an editorial, giving the views of Prof. Way on the application of lime—I have no access to them myself—and their adaptability to stiff clay flats, wet, but rich when drained and limed—diluvium.

"The question of applying lime to such soils is one of much interest to me, as I have several hundred acres of just such land in cultivation to which I should be happy to introduce you if you can trust yourself among slave owners."

The views of Prof. Way, (Chemist to the Royal Agricultural Society of England,) referred to, we presume are those contained in a lecture of his delivered some three years ago, portions of which were pretty extensively copied into our agricultural papers at that time.

Prof. Way had made a series of investigations on the "absorbive properties" of soils. He found that ordinary soils possessed the power of separating from solution in water the different earthy and alkaline substances presented to them in manure; thus, when solutions of salts of ammonia, of potash, magnesia, &c., were made to filter slowly through a bed of dry soil, five or six inches deep, arranged in a lower-pot, or other suitable vessel, it was observed that the liquid which ran through, no longer contained any of the ammonia or other salt employed. The soil had in some form or other, retained the alkaline substance while the water in which it previously dissolved passed through.

It was also found that the combination between the soil and the alkaline substance was rapid, if not instantaneous, partaking therefore of the nature of the ordinary union between an acid and an alkali.

In the course of the experiments, several different soils were operated upon, and it was found that all soils capable of profitable cultivation possessed the property in question in a greater or less degree.—Where sand, it was found, did not possess this property. The organic matter of the soil, it was proved, had nothing to do with it. The addition of carbonate of lime to a soil did not increase its absorbive power, and indeed it was found that a soil in which carbonate of lime did not exist possessed in a high degree the power of removing ammonia or potash in solution.

Now what, then, is the power of soils to arrest ammonia, potash, magnesia, phosphoric acid, &c.,

owing? The above experiments lead to the conclusion that it is due to the *clay* which they contain.—In the language of Prof. Way, however,

"It still remained to be considered, whether the whole clay took any active part in these changes, or whether there existed in clay some chemical compound in small quantity to which the action was due. This question was to be decided by the extent to which clay was able to unite with ammonia, or other alkaline bases; and it soon became evident that the idea of the clay as a whole being the cause of the absorbive property, was inconsistent with all the ascertained laws of chemical combination."

Further, this power of the soil was found not to extend to the whole salt of ammonia or potash, but only to the alkali itself. If, for instance, sulphate of ammonia were the compound used in the experiments, the ammonia would be removed in clays, a peculiar class of double silicate to which the absorbive properties of soils are due. He found that the double silicate of alumina and lime, or soda, whether found naturally in soils or produced artificially, would be decomposed when a salt of ammonia, or potash, &c., was mixed with it, the ammonia or potash taking the place of the lime or soda.

Prof. Way's "discovery," then, is not that soils have "absorbive properties"—that has been long known—but that they absorb ammonia, potash, phosphoric acid, &c., by virtue of the double silicate of alumina and soda, or lime, &c., which they contain.

Soils are also found to have the power of absorbing ammonia, or rather *carbonate* of ammonia, from the air.

"It has long been known," says Prof. Way, "that soils acquire fertility by exposure to the influence of the atmosphere—hence one of the uses of fallows. * * I find that clay is so greedy of ammonia, that if air, charged with carbonate of ammonia, so as to be highly pungent, is passed through a tube filled with small fragments of dry clay, *every particle of the gas is arrested.*"

This power of the soil to absorb ammonia is also due to the double silicates. But there is this remarkable difference, that either the lime, soda, or potash, silicate is capable of removing the ammonia from solution, the lime silicate alone has the power of absorbing it from the air.

It is on this fact, that the views of Prof. Way, to which our correspondent refers, are based. Lime may act beneficially on many or most soils, by converting the soda silicate into a lime silicate, or in other words, converting a salt that will not absorb carbonate of ammonia from the air, into a salt that has this important property. There is no manure that has been so extensively used and with such

general success as lime, and yet "who among us," says Prof. Way, "can say that he perfectly understands the mode in which lime acts?" We are told that lime sweetens the soil, by neutralizing any acid character that it may possess; that it assists the decomposition of inert organic matters, and therefore increases the supply of vegetable food to plants;—that it decomposes the remains of ancient rocks containing potash, soda, magnesia, &c., occurring in most soils, and that at the same time it liberates silica from these rocks; and lastly that lime is one of the substances found uniformly and in considerable quantity in the ashes of plants, that therefore its application may be beneficial simply as furnishing a material indispensable to the substance of a plant.

These explanations are no doubt good as far as they go, but experience furnishes many facts which cannot be explained by any one or all of these suppositions. Lime, we all know, does much good on soils abounding in organic matter, and so it frequently does on soils almost destitute of it. It may liberate potash, soda, silica, &c., from clay soils, but the application of potash, soda and silica has little beneficial effect on the soil, and therefore we cannot account for the action of lime on the supposition that it renders the potash, soda, &c., of the soil available to plants. Furthermore, lime effects great good on soils abounding in salts of lime, and therefore it cannot be as a source of lime for the structure of the plant that it operates.

None of the existing theories, therefore, satisfactorily account for the action of lime. Prof. Way's views are more consistent with the facts of practical experience; but they are confessedly hypothetical; and his more recent investigations do not confirm the idea that lime acts beneficially by converting the soda silicate into the lime silicate.

Thus, six soils were treated with lime water till they had absorbed from one and a half to two per cent. of their weight of lime. This, supposing the soil to be six inches deep, would be at the rate of about 300 bushels of lime per acre. The amount of ammonia in the soil was determined in the soil before liming, after liming, and then after being exposed to the fumes of carbonate ammonia till it had absorbed as much as it would. The following table exhibits the results:

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Ammonia in 1,000 grains of natural soil,	1.906	0.181	0.085	0.109	0.127	0.128
Ammonia in 1,000 grains of soil after liming,	0.169	0.102	0.040	0.050		0.125
Ammonia in 1,000 grains of soil after liming and exposure to the vapor of ammonia,	2.226	2.066	3.297	1.076	3.265	0.208
Ammonia in 1,000 grains of soil after exposure to ammonia without liming,	1.905	1.906	3.286	3.296	2.615	0.178

No. 1. Surface soil of London clay.
 No. 2. Same soil from $1\frac{1}{2}$ to 2 feet below the surface.
 No. 3. Same soil $2\frac{1}{2}$ feet below the surface.
 No. 4. Loam of tertiary drift 4 feet below the surface.
 No. 5. Gault clay—surface soil.
 No. 6. Gault clay 4 feet below the surface.

It is evident that lime neither assisted nor interfered with the absorption of ammonia, and hence the beneficial effect of liming on such soils must be accounted for on some other supposition. This negative result, however, does not disprove the truth of Prof. Way's hypothesis, for it may be that the silicate salt in the natural soils was that of lime and not that of soda. Indeed, the extent to which the natural soils absorbed ammonia—equal, in No. 3, to about 7,000 lbs. of ammonia per acre, equivalent to the quantity contained in 700 tons of barn-yard manure—shows this to have been the case.

The lime liberated one-half the ammonia contained in the soil.

"This result," says Prof. Way, "is so nearly the same in all cases, that we are justified in believing it to be due to some special cause, and probably it arises from the existence of some compound silicates containing ammonia, of which lime under the circumstances can replace one-half—forming, for instance, a double silicate of alumina, with half lime

and half ammonia—such compounds are not unusual or new to the chemist.”

This loss of ammonia from a heavy dressing of lime is very great. A soil five inches deep weighs in round numbers 500 tons, or 1,000,000 lbs. The soil, No. 1, contained 0393 per cent. of ammonia, or in an acre, five inches deep, 293 lbs. After liming it contained 0169 per cent., or in an acre five inches deep, 169 lbs. The loss by liming is 124 lbs. of ammonia per acre. This is equal to the quantity contained in 800 lbs. of good Peruvian guano, or 12½ tons of barn-yard manure.

In commenting on this great loss of ammonia from liming, Prof. Way observes:

“Is it not possible, that for the profitable agricultural use, the ammonia is too highly locked up in it? Can we suppose that the very powers of the soil to unite with and preserve the elements of manure are, however excellent a provision of nature, yet in some degree opposed to the growth of the abnormal crops which it is the business of the farmer to cultivate? There is no absolute reason why such should not be the case. A provision of nature must relate to natural circumstances; for instance, compounds of ammonia may be found in the soil capable of giving out to the agencies of water and air quite enough of ammonia for the growth of ordinary plants and the preservation of their species; but this supply may be totally inadequate to the necessities of man. * *

* Now it is not impossible that the laws which preserve the supply of vegetable nutrition in the soil, are too stringent for the requirements of an unusual and excessive vegetation, such as the cultivator must promote.”

“In the case of ammonia locked up in the soil, lime may be the remedy at the command of the farmer—his means of rendering immediately available stores of wealth, which can otherwise only slowly be brought into use.”

“In this view, lime would well deserve the somewhat vague name that has been given it, namely, that of a “stimulant;” for its application would be in some sort an application of ammonia, while its excessive application, by driving off ammonia, would lead to all the disastrous effects which are so justly attributed to it.”

“I do not wish to push this assumption too far,” says Prof. Way, in conclusion, “but if there be any truth in it, it points out the importance of employing lime in small quantities at short intervals, rather than large doses once in many years, as is the general practice in England.”—*Genesee Farmer*.

THE English Agricultural Society has offered a purse of £500 for the best steam plow, no satisfactory invention of such a machine having yet been brought forward [in England.]

CLOVER SEED—GATHERING AND CLEANING.

In the May number of the *Valley Farmer* we promised to give some information in regard to the proper machinery for gathering and hulling Clover seed, the manner of gathering, &c.

When it is intended to save the seed from a crop of clover, the spring growth should be cut for hay, or it may be pastured. When eaten quite close, the stock should be turned off till the seed is ripe and harvested.

The most common method of saving clover seed, is to mow it at a time when the largest quantity of seed is ripe, and before it begins to fall off from the heads. The heads, when fully dry, are threshed off by hand or with a threshing machine, or trod out on a barn floor, or in the field. The straw is then separated from the chaff and the seed is ready to be hulled and cleaned. With Manny's Combined Reaper and Mower, which is adjustable to cut any height, the heads can be cut off and received upon the apron until full, and then cast off in heaps upon the field.

There are also a number of Patent Clover Seed Gatherers. These we have never seen in operation, but understand some of them perform well. The best that we have seen is patented by Mr. John S. Gage, of Michigan. We expect to see these fully tried the present season and will then publish the result. We once made and used for many years, a very simple machine for gathering clover heads, with which a man and horse can go over and gather the seed from double the quantity of land in a day that he can cut over with a scythe; and when the heads only are gathered, they require no other labor, except drying, to prepare them to run through the hulling and cleaning machine. Any tolerable workman can make one of these machines in two days. It is upon the following plan: Make an ordinary sled with the sides or runners 14 inches wide and 6 feet 6 inches long. These may be placed 5 or 6 feet apart, and secured together with two cross pieces only at the back end, leaving the forward part open to the length of 3½ or 4 feet; then a box is made to nearly fill the width between the runners. The box is 4 feet long and 15 inches deep, with the forward end open. To the cross pieces at the bottom of the box, at the forward end, teeth of hard wood are secured so as to project about 12 inches; they should be three-eighths of an inch thick and one inch wide on top and made a quarter of an inch narrower or beveling on the underside. These teeth are placed three-sixteenths of an inch apart, so as to form a comb. If the upper sides of the teeth were capped with hoop-iron, neatly fitted, it would be better.—This box is hung between the sides of the sled upon two gudgeons or pins two inches in diameter, just as a cannon is hung in its carriage. With two han-

dles, four feet long, secured to the box and projecting behind, the box may be moved on the pins so as to raise or lower the teeth to adapt them to clover of any height. A man with a horse can strip the heads from four or five acres of clover in a day with this machine, and collect it in the box. With one of these machines a farmer can gather as much seed in a day as would be required to seed forty or fifty acres. It needs no hulling or cleaning unless it is designed for market. Some prefer to sow the seed in the chaff to that which is cleaned.

For market, the seed must be hulled and cleaned. For this purpose a great variety of machines have been invented, nearly all, however, upon the same general principle. Those in most common use in the clover growing counties of Ohio, are Mansfield's patent, manufactured by Mansfield & Whiting, Ashland, Ohio, and Crawford's patent, by other manufacturers. A specimen of these machines may be seen at the Reaper Warehouse of H. B. Howard, in Louisville, Ky. Others may be seen at the Agricultural Warehouse of Wm. M. Plant & Co., St Louis, Mo.

We have received from a gentleman in Missouri, the following letter, which was sent him by a gentleman in Ohio, upon the subject of clover seed. It contains information of so much importance that we publish it in this connection. The Syracuse machine referred to, is the Endless Chain or Railroad Horse Power and Thresher, manufactured by Emery & Co., and Wheeler, Melick & Co., in Albany, N. Y. In order to make the subject of cleaning with the Thresher, as referred to, a little more clear, we will state that the teeth in the Thresher are placed spirally around the cylinder, the front of the cylinder being cased up with iron or wood. The seed is filled in rather compact at one end, and by the spiral action of the teeth it is hulled as it is forced forward and discharged at the other end of the cylinder.—The method of hulling will answer where a farmer has the Thresher on hand, but a regular Huller, which hulls and cleans the seed at one operation, is to be preferred. These are run by any of the ordinary horse powers, the same as a common wheat thresher is run.

BUCYRUS, Ohio.

Dear Sir: Yours of the 4th inst. was received last evening. It is with pleasure that I furnish you with all the information within my reach, on the subject mentioned in your letter, to wit: The Raising of Clover and Clover Seed.

I have consulted a Mr. Ludwig, who is a farmer of much practical experience and observation. I have also consulted some other farmers whom I knew had

raised considerable clover seed, and I find their statements all substantially agree. I therefore give you the information as derived from Mr. Ludwig, believing his to be as reliable as any to be obtained on the subject. I drew up a series of questions which I supposed would, when answered, embrace the information you desired, and obtained his answers thereto in the following order:

1st. What is the best soil for the cultivation of clover?

Ans.—Clay soil, decidedly, for clover or wheat.—Lime should be an ingredient of the soil.

2d. The best method of preparing the ground?

Ans.—I have found it best to prepare the ground well for wheat, and if it has not been done in the last three years, the subsoil plow, or Michigan Double Plow should be used. Sow the wheat in the fall, and on the same sow clover in the spring.

3d. The best time to sow clover?

Ans.—Generally about the first of April, if pure seed is used—if in chaff, earlier.

4th. The quantity of seed to acre?

Ans.—About eight quarts of pure seed to the acre. You can scarcely use too much.

5th. The best time to cut clover for seed?

Ans.—When the largest quantity of seed is ripe. When more is falling off from over ripeness than is getting ripe, it is high time to cut.

6th. In what manner should the grass be treated when cut for seed?

Ans.—Get it dry as fast as possible, and with the least handling. Get it into barn (not stack, it will not turn rain.) It was formerly the plan to let it lay to *bleech*. That is wrong; it should not get wet if it can be avoided. It causes a great loss of seed.

7th. What is the best method of getting out the seed?

Ans.—I have used and seen used a number of Clover Hullers, but have found a good Syracuse threshing machine (for wheat) to answer the best, by adding thereto a *concave* of sheet iron, to be placed on the outside of the cylinder; the clover heads let in at one end and passing out at the other. Mr. Ludwig constructed this improvement for his own use, and also a *revolving screen*, through which it was first run and under which was a *fan*,—these separated the stems, leaves and light or seedless heads from the valuable portion, which being by this process much reduced in quantity and bulk, was then run through the threshing machine or huller, arranged as before mentioned. He, however, says, that it would be difficult to so describe the arrangement as to enable any one at a distance to arrange it. He informs me that by his plan he could, with three hands and two horses, clean forty bushels of

seed per day. Twelve to fifteen bushels is a good business with a clover huller.

8th. What clover machine or huller is esteemed the best?

Ans.—Those invented and made by M. H. Mansfield, of Ashland, Ohio.

9th. What quantity is usually raised per acre in Crawford county, Ohio?

Ans.—It is a very uncertain crop. From seven bushels to a total failure. Average, two and a half bushels per acre.

10th. The price per bushel?

Ans.—Very fluctuating, owing to crops, here and in other clover raising districts. Varying from \$3 to \$6.50.

I have given you what I believe to be the best information I could obtain, and as it comes from those whom I know to be successful cultivators, and those who have raised from one to four hundred bushels of seed in one year, I presume it is to be relied on as correct. This county, a few years since, sold for export, over 20,000 bushels of clover seed, which I believe is more than what has been produced by any other county in the Union.

The time is fast approaching when farming, to be successful and profitable, must be done on scientific principles. Our old *guess work* and *chance* operations will not compete with scientific knowledge.

With the hope that the above imperfect information may be of some service, I am very respectfully yours,

J. B. LARWILL.

Valley Farmer.

THE CULTIVATION OF ROOT CROPS.

At a recent Legislative Agricultural Meeting in Boston, the subject of "Root Crops" was discussed, and we condense from the *New England Farmer* such portions of the discussion as we think may be interesting and useful to our readers at this season:

SIXON BROWN, Esq., of the *New England Farmer*, said he thought we did not yet fully understand the value of root crops. In England they are highly valued, because more can be obtained from the same surface for the support of cattle, by their cultivation, than by the cultivation of grain, and because they are valuable in producing beef and mutton, which are in great demand there. They are a favorite diet for sheep. With us, there is a prejudice against the cultivation of roots, perhaps on account of the amount of labor required. They need a deep soil, and most farmers have not got into the habit of cultivating deeply. Not more than one farmer in a hundred, in Massachusetts, had made any fair experiments in trenching. There are sandy loams, and in some cases, clay loams, that are well suited to rais-

ing roots. If well cultivated, from six hundred to twelve hundred bushels may be obtained from an acre. He had raised parsnips at the rate of twelve hundred bushels to the acre. The mangel wurzel is very easily raised; it grows large, and is always an excellent root for stock. It grows much out of the ground, and therefore seems to require a different kind of cultivation from some other roots. In cultivating, it is necessary to have the ground well pulverized, and then two furrows are turned together, and upon the top of the ridge thus formed, the seed is sown; the ridge, being first flattened a little. The labor of harvesting them is less than that of turnips or ruta bagas. Cattle are very fond of them, and they are highly nutritious. He had not succeeded so well with beets as with other roots; but he had no doubt they could be raised at a handsome profit.

Round turnips may be cultivated easily by sowing them upon the land which is designed for grass, the ground being first plowed in July, and thoroughly prepared for grass, and the turnip seed being sown along with the grass seed. From three hundred to seven hundred bushels per acre may be obtained without any extra labor except that of gathering them. This method impoverishes the soil very little.

The advantages of feeding roots to stock were next referred to. He had been told that milk could not be made for market unless the cows were fed on meal of some kind; but he had found it too expensive to feed wholly with meal and hay. Having determined to try roots, after an experiment of feeding six cows with meal one season, he fed the same six cows with the same kind of hay, and with roots, the next season. The roots were of various kinds, the mangel wurzel, beet, ruta бага, round turnip, parsnip, and carrot, and these were mixed in feeding.—After being milked in the morning, each cow was fed with half a bushel of mixed roots, which they ate greedily. There was no complaint of the turnip taste in the milk, and his milk man returned him cash for twice as many cans of milk as he did the year before, when they were fed on grain. That experiment had satisfied him that more milk could be obtained by the use of roots, than by feeding a certain amount of meal a day, say three quarts a day, as he fed his cows the first winter. The milk from roots is perhaps of a poorer quality, but milk sellers rarely have any qualms of conscience about that, if they get a greatly increased quantity. Mr. Webster was a careful observer, and rarely talked about farming, anywhere, without bringing in the root crops. He saw that their cultivation would be of great benefit to New England farmers. In closing, Mr. Brown expressed the opinion that more could be made from

a given number of acres by the cultivation of roots, than by the cultivation of grasses and grains.

Mr. Williams, of Hadley, was of opinion, that root crops might be raised with great advantage, not only in his vicinity, but throughout the State.

Mr. Brown stated the result of feeding round turnips to a cow for fattening, which he fed thirty bushels, with hay, and made her very fat indeed, so that she was sought by the butchers at a high price. In preparing the land for turnips, he pulverized it well, and levelled with brush harrow. The seed was sown in drills, marked out with a machine prepared by himself. The labor of sowing in that way was very little, and they were weeded principally with a wheel hoe. He had recently seen a plan of a cultivator which weeded both sides of a row at once, but he had not seen it tried.

Mr. J. L. Lovering, of Vermont, said that though root crops were perhaps less cultivated in Vermont than Massachusetts, there are few farmers who do not raise more or less. They raise many sheep, and it is becoming an axiom that no farmer can have a good flock of merino sheep who does not feed them with roots as often as twice a week. The green food seems to prevent some of the diseases to which they are subject when not thus fed. Ruta bagas are raised principally for feeding stock. He had not succeeded well with getting his carrots to germinate, as for some cause or other the seed failed; but when they came up well, he had no difficulty in obtaining a large crop. He had raised at the rate of twelve hundred bushels to the acre, and he thought them better than ruta bagas. Potatoes are still fed to stock a good deal in Vermont. Many are raised, and if they will not bring in market about twenty-five cents per bushel, they are considered worth that to feed out. Some farmers cook ruta bagas before feeding, and one gentleman had recently fattened a pair of old cattle with ruta bagas worth twice as much when cooked as when fed raw. Turnips are fed to sheep, and are thought to be better for them than carrots, or other roots, producing a better quality of milk for the lambs.

Gen. Towne, of Worcester county, had a very high opinion of the importance of roots for feeding stock; the sugar beet, for beef and for stock generally, was in his opinion, decidedly the best root that grows. One great advantage in raising them is, that the tops are very good indeed for young hogs. He always meant to have some pigs about the first of September, so that about the first of October the milk of the mother would hardly be sufficient for them.—Then he had a yard of sugar beets near, and he would make a little hole in the fence so that the pigs might understand they were getting into mischief by getting among the beets, and they will eat

off all the leaves, which are as good as green corn for them, and the eating of them off does not injure the crop at all. He thought the leaves more than paid for the labor of raising those which were near the hog pen.—*Genesee Farmer.*

From the Southern Planter.

RAISING HORSES—LETTER FROM THE LATE WM. R. JOHNSON, OF CHESTERFIELD.

GLOUCESTER Co., July 5th, 1836.

Gentlemen: As the author of the accompanying letter addressed to me, in answer to mine, written about the same time, will no doubt be considered high authority for the opinion expressed on the subject of raising horses, I take leave to forward a copy for publication, in order that the information it contains may be generally disseminated by means of your valuable and useful paper.

I omit that portion of Mr. Johnson's letter on business of a private nature. Should you deem the letter of sufficient importance to occupy a space in the Southern Planter, you are at liberty to publish it as a contribution from a

SUBSCRIBER.

PETERSBURG, 14th Aug., 1830.

My Dear Sir: My absence from this place has prevented me from receiving your esteemed letter of the 24th ult. until now.

With regard to the questions in your letter, I will with the greatest pleasure answer them.

I do not believe that mares in foal should be housed too much when they are advanced in age, they should be put up in bad weather; if the pasture is good they require no feeding—if it is such a one only as reduces them, they ought to be fed with corn or oats—corn is best in the winter and oats in the summer—mares ought to be kept in snug saddle horse order, never made too fat or overloaded with flesh—gentle exercise either in harness or otherwise is not injurious but rather beneficial, unless the mares are very old, then they ought to do nothing but breed—but until they are 12 or 14 years of age they can be moderately used, and safely too, till within a month of the time of foaling.

After the mares have colts they ought to be fed with oats for two weeks and then be governed by circumstances. If the mare and colt do well upon pasture it is unnecessary to feed, and the condition of the mare and colt will show.

Clover when young is good grazing, but only when young ordinary pasture. Short grass is far preferable, and if not sufficient, feed them night and morning.

Colts should be weaned at about six months old, generally as soon as you have gathered fodder; if you have two colts turn them in the corn field—if but one put it in a stable and feed it with meal and oats three times a day, only giving it a little at a time, not more than it will eat. Feed ought to lay by a colt; after your colts are weaned turn them out in all good weather, and so treat them as to keep them growing, but never too fat; if promising and large don't force its growth—if small push it and so continue until two years old, then break it gently, and by degrees, afterwards it ought to be trained, and by the colt its management must be governed.

If this sketch is not sufficient for you or any of your friends, I will with the greatest pleasure answer any inquiry you may make of me.

I am in heart, most respectfully,
W. R. JOHNSON.

WHAT MAY BE DONE WITH A POOR ORCHARD.

WE condense from the experience of a friend, whose whole statement would occupy more space than we can give. The following may be relied on as entirely accurate: Five years ago, he purchased an orchard containing 23 trees. They had never borne much, having been planted but a few years. Their treatment had been miserable. Cows and horses had been pastured in the orchard. More than one-quarter of the trees had been bruised or bent, so that it seemed that they must die. The rest had been left unpruned, the suckers were growing from their roots, and large scars where the bark had been torn off by the horns of cattle, disfigured many of them. The insects, too, had held carnival among them. Apple borers had pierced their trunks; caterpillars had spun their webs from year to year in their branches; and ants, whose hills had multiplied around, were swarming on the trees or fruit, during all the warm months.

Such was the condition of the trees. When our friend considered the case, he seriously thought of cutting them all down, and beginning anew. But the entreaties of his wife, who thought that some fruit might be grown on some of the trees, while a younger orchard would be coming on, induced him to try what could be done with these ragged, hopeless subjects.

His plan was a simple one. He turned out all animals. He pruned the trees carefully, covering all the wounds with grafting wax or shellace. He propped up the trees that were bent almost to the ground, and covered the large scars with cotton cloth that had been spread with grafting wax. He removed all the sprouts from the roots, and kept

them cut off as fast as they reappeared. He battled the insects as best he could. The borers he dug out of the trees, with a knife. The caterpillars he burned up, cutting off the limbs where their nests were, and putting them into the kitchen stove. The ants he destroyed by pouring hot water after the Monday's washing, into their hills. And he destroyed the moss, and numberless eggs, and grubs, by removing the rough bark, on the trunks and limbs, and washing the trees generously with old soap.—He enriched the ground by spading under manure mixed with lime, and a little salt. This course he has kept up, as he thought needful, every year since.

But what are the results? We will state them.—Every tree has lived. The most hopeless ones have borne generously. The trees have quadrupled the size of their tops in the last five years. The orchard attracts the attention of every passer-by. All exclaim: "What fine apples you have Mr. ———!" The insects, above mentioned, have almost entirely disappeared. Last year, (1855) these 23 trees bore between 100 and 150 bushels of apples, and when this statement was made to us, more than half of them was just blooming, as if for another generous yield in 1856. Such are the results thus far.

Our readers will not wonder that our friend is greatly encouraged by his experiment. He adds at the end, this application: 1. Consult your wife before cutting down your apple trees. 2. Take good care of your trees if you have any. 3. Don't be encouraged in view of some rather hopeless prospects. 4. Take the Ohio Farmer, for it was from this, (he says) and from other less valuable papers, that he gained the knowledge which enabled him to save his orchard.—*Ohio Farmer*.

VINEGAR PLANT.—We spoke last April of a Vinegar plant given us by a lady friend of Webster.—We took it home to our office, procured from an apothecary's store one of his largest glass jars, holding some two gallons, filled it with common sweetened water, committed the plant to it, and there it has been ever since spreading its folds upon the surface, till it was evident the vinegar had become strong enough almost for the death of the plant;—whereupon, this week, we removed the original sweetened water, and supplied its place with new for the plant to work upon. On drawing off the vinegar it was found very strong indeed—almost as strong as lye, and for ordinary table purposes it will require to be diluted with fresh water. There is no mistake about it—this vinegar plant will keep our family in purest vinegar as long as we shall need such an article.—*Rural Intelligence*.

THE SUN-FLOWER.

The Sun-flower is destined to become one of the greatest agricultural products, yet few know its value. I have raised and tested it, and think no farmer who has land should be without it for feeding animals, and the oil it produces. It has yielded with me from 90 to 100 bushels manured the same as for corn. I plant in drills three or four feet apart, and scatter the seeds about six inches distant in the row, using from four to five quarts per acre.

When ripe, as the large heads begin to shell out, I cut it up, and leave it scattered in rows to dry, and when thoroughly cured draw it into my barn, handling carefully and placing on an airy scaffold. When wanted, the seed will nearly all shell out by throwing it down, and needs but little pounding. Clean in a common fanning mill.

One hundred pounds of this seed yield forty of oil; one bushel will yield a gallon of oil. I had a part of my seed made into oil at a common oil mill, and used it for burning in lamps, and tested it well for painting. My house has been painted a long time, and it wears equal to those where linseed oil is used, and the walls are left more glossy, as though a little varnish had been applied.

The oil cake is nearly equal to any other; and there is nothing better to feed hens in the winter than the sun-flower seed; they did not know what it was at first, but by mixing it with oats, they gradually grew fond of it, and produced eggs more abundantly than with any other food. The seed is known to be good for horses, and is well worth fifty cents per bushel to farmers. I hope they will test this matter for themselves, and I am sure they will find it profitable to raise their own oil, &c., as I have done.

Rural New Yorker.

SELF-SEALING FRUIT CANS.—Take a common fruit jar, with a tin cover, made like a shoe-black box.—The jar and cover will probably cost a dime, and hold a quart. Any of the cements that are used for sealing cans or jars will do for this. Heat your fruit either in the jars, or in some other vessel, and pour it in the jar, (previously warming them.) Now pour enough cement in the cover to give the bottom and side a thin coat. When the cement becomes slightly stiff, apply the cover over the jar, the jar having been well filled, and turn the jar *upside down*; and *here is the invention*. As fruit jars have a lip, you now have a little trough to fill with cement, and the work is done. Let your jars get cold *standing on the covers, and put them away in the same position*.

It is the steam escaping in the common way of sealing or soldering cans, that leaves so many of them imperfect. My plan entirely obviates this dif-

ficulty, as the steam or vapor is always on top of the fruit. This arrangement, you perceive, is really a chemist's *pneumatic trough*, and there is no danger when your fruit is cooled down and created a vacuum, that the external atmospheric pressure will force the corks in.—*Cor. O. Cult.*

STRAWBERRIES, raspberries, blackberries, currants, peaches, in fact any fruit, may be preserved in air-tight bottles, so as to retain its natural flavor, with but little labor or expense. The following is an excellent mode:

"Fill the bottles quite full with fruit not quite ripe; place them, with the corks put lightly into them, in a copper with cold water up to the necks, and gradually raise the temperature of the water to 160 degrees, and not exceeding 170 degrees Fahr. Keep them at this temperature half an hour; then take each out separately, and fill it up with boiling water from a kettle to within an inch of the cork; drive in the cork firmly, tie it over, and dip it immediately into bottle wax, and lay the bottle down on its side to keep the cork always damp. To prevent fermentation, turn each bottle half round twice or thrice a week for two or three weeks; after that they will need no further care. The corks should be soaked in water two or three days before being used.

Another mode is to tie the corks before putting the bottles in the water. The heat expels the air from the fruit. As soon as the bottles are cool enough apply the sealing wax. We have eaten peaches in winter which were cut up and bottled, and kept in this way, almost as good as when cut up for the table fresh from the tree. The secret consists in exhausting the air from the bottles; and making the corks air-tight.—*Exchange.*

STATE SHOWS, 1856.

American Pomological Society, at Rochester,	Sept.	24
Canada East, at Three Rivers,	Sept.	16, 17, 18
Canada West, at Kingston,	Sept. 23, 24,	25, 26
Georgia, at Atlanta,	Oct. 20, 21, 22,	23
Illinois, at Alton,	Sept. 30, & Oct. 1,	2, 3
Indiana, at Indianapolis,	Oct. 20, 21, 22, 23,	24, 25
Maine,	Oct. 28, 29, 30, 31	
Michigan, at Detroit,	Sept. 30, & Oct. 1,	2, 3
New Hampshire,	Oct.	8, 9, 10
New Jersey, at Newark,	Sept.	10, 11, 12
New York, at Watertown,	Sept. 30, & Oct. 1,	2, 3
North Carolina, at Raleigh,	Oct.	14, 15, 16, 17
Ohio, at Cleveland,	Sept. 23, 24, 25,	26
Pennsylvania, at Pittsburgh,	Sept.	30
South Carolina, at Columbia,	Nov. 11, 12, 13,	14
United States Agricultural Society, at Philadelphia,	Oct.	7, 8, 9, 10
Wisconsin, at Milwaukee,	Oct.	8, 9, 10

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., SEPTEMBER, 1856.

THE ANNUAL ADDRESS.

Who is to deliver the Annual Address at the Fair? The people are anxious to know, and it is time the announcement was made.

— We invite the attention of our readers to the Prospectus of that valuable paper the Scientific American, which we publish in this number.

THE STATE FAIR.

Bear in mind!—The State Fair will be opened, in this City, on the 14th of October. Make your arrangements, in time, to attend, and be sure to bring something along with you to exhibit. If you have prepared nothing *especially* for the occasion, gather up *something*, however small, and bring it along. Remember, this world of ours is not made up of towering mountains, foaming cataraacts and billowy oceans, but of small atoms—each furnishing matter for curious and instructive examination. So of Fairs. It is not the big fat cattle, huge machinery, or prodigious pumpkins that form the chief attractions: the numerous smaller specimens of art and natural productions, possessing beauty, utility and perfection, and manifesting skill, ingenuity, or industry, make up the grand and imposing whole. Every friend of improvement should take a deep interest in, and contribute something to the success of the Fair; and every North Carolinian should take pride in doing whatever may be in his power to render the show not only respectable, but equal if not superior to similar exhibitions in other States—Aye, let us beat them if we can.

We call, then, upon all—and especially upon the ladies—to be READY—to attend in person and bring something to show. We hope the ladies will take the cause into consideration—it tends greatly to maintain their rights and enlarge their comforts—and agitate the subject from now until the time for the meeting, giving no rest to har-

bands or brothers until they arouse in them the right spirit and prompt them to the right action. Let us have one grand mass meeting of the whole State, which shall send back a thrill of delight and spirit of improvement from its centre to its circumference.

THE ARMY WORM.

THIS destructive scourge, equal to any of the plagues of Egypt, made its appearance in this City and all over the County as far as we have heard from, about the 20th of August, in such vast numbers, in some places, as to cover the whole surface of the earth. They first attacked the Crab Grass, and broad acres of this delicate and luxuriant plant were apparently swept away at a meal. They next fell upon the blades of corn, and where these were young and tender, riddled them in a trice.—In some instances, we learn, they are now devouring the cured fodder—eating it to the tie while hanging on the stalks, and then glutting their voracious appetites upon the stacks. We do not learn that they have yet injured the cotton. If they get into that, they will make sad havoc of the staple commodity of a large number of our agriculturists, and, this year, their almost sole reliance for the means of support.

It is the first time, we believe, this pest has ever visited this section of the country. The drought, the chinch-bug and the army worm, now appear to have leagued together to “harrass our people and eat out their substance.”

WORK FOR SEPTEMBER.

Saving Fodder will occupy a large portion of this month. Take care that every blade is saved and well cured. Cut all the barren stalks and save them like tops are secured. Save crab-grass and everything that will make hay.

Turnips may yet do well if sown early this month.

Wheat.—Prepare land for wheat, by turning under weeds, peas, and stubble, and sow in October. An excellent article on wheat will be found in another part of this number.

Rye, Winter Oats and Clover may be sown this month.

Ditching and Draining should not be overlooked.

Peas should be gathered, as they ripen.

Make Manure all the time—as a matter of principle as well as necessity, accumulate a little at least every day. It will pay well and gladden your heart when next crop comes on.

We request some of our readers to answer the following questions:

For the Arator.

MR. LEMAY: Will you, or some of your correspondents, be so kind as to answer the following interrogatories:

1. Will woods-mould, if put up in small heaps, and left to rot, pay for hauling, if applied to corn, cotton, or wheat land?
2. Will it pay to compost with barn-yard or hog lot manure?
3. Will it pay to compost with lime or ashes?
4. What kind of manure and best mode of application for a sandy soil?
5. Will it improve the soil to turn under stubble land in the fall?
6. Will a heavy coat of green pea vines improve the soil if turned under before frost?

Yours, &c.

B. A. W.

Elevation, Johnston Co., N. C., Aug. 1856.

THE ARATOR.

THE Arator would be one of the best of agricultural papers if a good many of our farmers would contribute to its columns. I can read with delight, and profit thereby, the good communications from the good farmers of the old North State. Can you not stimulate the farmers of North Carolina to contribute more extensively to its pages? If this can be done, you, I and all your patrons will be much benefitted thereby. It will increase your subscription list, raise my compost heap, cause my neighbor's pig to weigh fifty lbs. more, and uncle Ben's pony will hold up his head better and trot faster.

Yours, &c.,

B. A. W.

Elevation, N. C., Aug. 1856.

THE Scientific American—a paper, by the way, which every house-keeper should take and read—copies the following article from the Arator, and informs us by the subjoined remarks, that our friend is a little too late to secure his patent: a New Yorker having got the start of him. We are right glad, however, tho' the honor and emolument may enure to a New Yorker. that the thing so much needed in effecting a most necessary and salutary reform—if not desired—is secured; and hope it will be used, notwithstanding it may go against the grain, as a desperate remedy in desperate cases. Let it be insisted upon by the *press gang* throughout the land.

EARLY RISING.

Early to bed and early to rise,
Makes a man healthy, wealthy, and wise.

This is an old saying, and properly understood and practiced proves itself a verity.

A certain amount of sleep and rest are necessary as "tired nature's sweet restorers;" but for these the night was made—the day for wide-awake, active, energetic, systematic, constant labor. All, therefore, men, women and children, should be up in time to behold "the rosy dawn of day." If any of our readers indulge in different habits—turn after morning light upon their beds like doors upon the hinges, hug their pillows, and fold their hands to a little more sleep, we insist upon a speedy reformation. If they need assistance, let them get an alarm clock, and if that should fail to produce the desired effect, then we would recommend to them the new invention of a friend, who will soon be out with a patent bedstead, which is to be so constructed, with a spring that it will be wound up at the right bed time, and at daylight, precisely, will run down, capsize, and turn its occupant so roughly on the floor as to make him find himself getting up in time wide-awake for all day. Will the Scientific American put this in its list of applications for new patents.

[We extract the above from *The Arator*—a valuable agricultural journal published at Raleigh, N. C. A New Yorker has got the start of the North Carolinian in the capsizing bedstead. In No. 4 of the present volume Scientific American, we published an engraving of Houses' Patent Alarm Bed, in which the inventor is represented as undergoing the capsizing process.

At the last Fair of the American Institute, this invention was exhibited to an astonished multitude. It was generally disapproved of by *lazy sleepers*.]

Scientific American.

WE adopt the following sensible remarks of the *Homestead*, and commend them to the serious consideration of our readers.

WASTE CAPITAL IN FARMING.

WE are persuaded that there is no business followed among civilized men, in which so much capital lies waste as in farming. There is a consuming passion among us, to have things on hand for which we have no earthly use, or if we need them, to use them only in part. This business no doubt needs capital as largely as any other, and there are few farms on which there might not be twice the

present capital profitably invested. But we do not half use the capital already laid out.

We mean it as a sober statement of facts when we say, that one-half the amount of the value of our farming land in this commonwealth is utterly unproductive. So far from paying interest it does not even pay the taxes, that are annually assessed upon it. It is a dead loss, a bill of expense to the owners every year, a source of discouragement to those who are engaged in the cultivation of the soil.

Look for a moment at the operation of this large amount of waste capital in unproductive land. A. buys a farm of two hundred acres for \$4000. He has only \$2000 left to stock it with, and to repair the buildings. He can only work fifty acres with this sum to any advantage. This will only keep himself, and a man in summer, profitably employed. The other three-fourths of his purchase is a dead weight upon his enterprise. He gets no return for \$3000, but has to pay taxes for the barren privilege of owning one hundred and fifty acres of land, which he does not improve. A part of it lies waste in disagreeable pasture, supporting but one cow, where it ought to support three. Another part lies waste in mowing land yielding but one-half ton to the acre where it ought to yield three. Another part still lies waste in a bog swamp, yielding a glorious harvest of frogs, water snakes and mud turtles, where it ought to yield corn, potatoes and other roots. The poor man deceives himself, when he runs over these pastures and mowing fields, gleaning their stunted herbage, and infers that his farm is of any profit to him. All that he gets from them, might be got from a few acres of well improved land. Every year he pays one hundred and eighty dollars interest, on capital that lies waste. This is enough to cripple any man's industry, and keep him poor, all the days of his life. Capital doubles once in about eleven years—at compound interest. Three thousand dollars in eleven years becomes six, and in twenty-two years becomes twelve thousand dollars. This is what A. ought to have to show for his three thousand dollars invested in that extra one hundred and fifty acres of land, after he has worked it twenty-two years. But instead of this he has barely got a living, or perhaps has fallen in debt, and is obliged to sell out or emigrate. This is a process that is still going on in almost every town in the State. Farmers are ruined, or fail to prosper, by reason of the capital that lies buried in unimproved land.

Nor is this all the waste. Mr. A. manages quite as poorly with his stock, as with his land. He has two yoke of cattle and a horse, that are as capable of laboring six days in the weeks as he is. It will cost him say three hundred dollars to feed them, whether they do much or little. They are capable of doing three hundred days work in the year, and at any farm work, they are worth at least three dollars a day. There is plenty of work for them on the farm—plowing, carting stone, carting muck and manure, carting wood, clearing land, sub-soiling, and he might keep them constantly at work and make them earn him nine hundred dollars a year, if he could only afford to hire another hand. But he has paid so much for his farm, that he cannot afford it, he thinks. So he only works his farm half the time, and half the capital he has invested in beef sinews and horse flesh lies waste. In other words, he sinks four hundred and fifty dollars on his farm, every year. He ought to have that to show for the use of his team, either in cash, or in improvements upon his soil. We think we have not over stated this item of waste. If any man doubts, let him estimate the amount of waste sinews upon his farm. A farmer ought so to plan his business, that he shall have full employment for every ox and horse that he keeps. He should gather up the fragments, that nothing be lost.

If our farmers once turn their attention to this matter, we believe they will find occasion for wonder, at the amount of capital that lies waste around them. We only lack the time to write a book upon this subject, to show our brethren of the plow the secret of their pecuniary embarrassments, and want of thrift. We would suggest "Waste Capital" as a topic for discussion in our farmers' clubs, and as the theme for some of our agricultural addresses. At any rate we beg that our readers on these occasions will let Greece and Rome, Palmyra and Nineveh entirely alone to attend to ruins near home.

But it will be asked, what is to be done in regard to this waste capital? What is your remedy? Either of two things must be done. Mr. A. must sell three-fourths of his farm, or he must hire capital to work the whole of it. To continue as he is, is to live in bondage all his life. Which of the two he should do, sell or borrow, will depend very much upon his character. If he is a timid man let him sell, and move cautiously, doing only what he is sure he can do well. If he has good judgment, and self reliance, and especially if he have good market within easy distance, let him hire the money and improve the whole. A man who un-

derstands his business, can afford to hire money to pay for the stock, the manure, and the labor he needs to put upon a farm. We shall be glad to hear from our readers on waste capital.

THE PREPARATION AND USE OF MANURE.

THERE is no department of farm economy (truly remarks the *Southern Cultivator*) more important than the skillful preparation and use of manure. One has only to see a cultivator manage his manure heap, to form a very correct opinion of his knowledge of his calling. If he habitually wastes the indispensable food of his annual crops by allowing the droppings of his cattle, hogs and other stock to fall in winter, or whenever he feeds them, where it rains or snows, his practice is that of a thoughtless spendthrift, unless he designs to fertilize the yard or field in which his stock run. In the latter case, his manure may not be used to the best advantage, but it is not wasted except in a small degree. To increase the absorptive power of the soil, it is generally good policy to plow any lot near one's stable or barn on which hogs, cattle, sheep, or mules are to be fed, and leave their solid and liquid excretions. To keep off the direct rays of the sun, a covering of forest leaves, straw or broom grass spread over the lot is worth more than it costs, while the animals gain faster in flesh for having a first-rate bed to lie on. This arrangement saves all the trouble and expense of hauling out dung, when other work often presses hard for immediate attention. After one lot is made rich, turn into another, subdue it well, being particular to avoid all surface washing from a side hill, or other inequality.

There are, however, from four to six months in a year, in Georgia, during which all kinds of stock do better, and *pay better*, under a proper shelter from cold rains and other storms, than they possibly can when denied these advantages. The true philosophy of domestication, as applied to the animal kingdom must be studied and understood before the most economical preparation of manure will appear in its true light to such as rear and keep live stock. Many now have a mistaken notion to the effect that, to produce superior horses, mules, steers, cows, hogs, sheep, and poultry, and at the same time make a very superior article of manure in abundance, is a *losing business*. It is the secret dread of final loss in a pecuniary point of view that really prevent so large a share of the community from making the most of all the ele-

ments of fertility within their reach. They fear to touch anything like a new plan for sheltering manure and housing stock that differs from what they have before seen. So far as artificial warmth, civilized protection, and liberal feeding are concerned, their minds recognize only a mere shade of difference between wild animals which wholly feed themselves, and those taught to depend on the foresight and care of man as a superior intelligence. Wildness, independence and small expense to the owner in animals involve nearly the total loss of all their manure, a loss of most of the milk of kine, and of much of their flesh. To improve a cultivated plantation, such stock is utterly valueless. Its whole recuperating machinery is outside of the stercorary, or place where fat, dung and urine are accumulated. The advantage of a stercorary over a stable for the manufacture of manure is, mainly, in the facility it affords for carting leaves, corn-stalks, and other trash into the sheltered place where stock will tread coarse vegetable-matter into a fine pulp, which, with their droppings, will form a cheap and profitable aliment for all kinds of crops. There is often much inconvenience in getting a wagon or cart near enough to the dung in a stable to handle it with ease and rapidly. A good stercorary is not liable to these objections.

Manure from horses is very apt to *fire-fang*, whether under shelter, or exposed to the weather. In this excessive heating it often parts with all its ammonia, and most of its oxygen and hydrogen, and is rendered comparatively valueless. A few buckets of water thrown once in ten days on the heap, or over the dung will arrest this injurious chemical action, and prevent loss. Where family clothes are washed at no great distance from a stable, the servants should put all wash-water and other slops on manure heaps; especially upon such droppings as are under a roof. Indeed every barn, stable or stercorary, ought to have eve-troughs and a reservoir for catching rain-water.— This is quite desirable for watering stock, as well as for tempering sheltered manure. Too much water is to be avoided; and one of the greatest objections to permitting manure to lie in an open cow-yard, or any similar place, is the repeated washings to which it is exposed. The direct rays of the sun increase the injury done to the manure in open courts or lots. We have often seen the earth excavated in a stock-yard to form a broad, and sometimes a deep basin for holding both liquids and solids. This practice runs into the opposite extreme to fire fanging, and is equally un-

wise. In the March number of this journal we called the reader's attention to the value of Shade, Shelter and Moisture as chemical agencies, in promoting the rotting of dead plants, and the increase of fruitfulness. We desire now to state that the presence of too much water, like that which surrounds the logs and brush at the bottom of a mill-dam, wholly prevents vegetable decay, and of course the farther rotting of a mass of water-charged, saturated manure. Timber, forming the bed of old Roman bridges, which had been twenty centuries under water, has recently been taken out of the mud and found sound. The preservation of delicate plants, their organs and tissues, in swamps, under water, has frequently excited the admiration of naturalists.

Manure in a hole filled with water, is little better than a small natural swamp, and not at all adapted to the formation of a good fertilizer.

Formerly it was the German, Scotch and English practice to work over large masses of compost with a shovel or dung fork; and among old fashioned farmers this system still prevails. Where labor is cheap and crops dear, so much handling may not involve any considerable loss; but it is obvious that no amount of turning over a ton of dung or of any decayed vegetable matter, can increase its quantity, or change the essential properties of any constituents. The modern improved practice is to exchange the water that passes through the compost, or manure, instead of lifting the solids. With a good pump, manure-water may be lifted and run through the mass at a tenth of the expense of turning over the whole heap. As water runs through and into the reservoir below, air follows it into the centre and bottom of the compost sufficiently to excite the putrefactive fermentation. For common field crops, it is sound economy to have two-thirds of the rotting of manure take place in the soil, instead of the compost heap.

The only valid objection to a raw manure, and dry, unrotted forest leaves, plowed in, is our inability to wait for either kind of fertilizer to decompose and nourish our needy starving plants. Our poor soils demand food that is wholly soluble in a few months before they can yield us large crops. One pays *shave-money* to sterile land precisely as he does interest to a tight-fisted money lender. In other words, to improve poor land profitably, one needs capital of his own—not borrowed manure in any shape.

But where one has a little money to pay out for corn, peas, oats, fodder, chucks, straw, hay, &c.,

mainly with a view to produce the wherewithal to impart fruitfulness to exhausted old fields, nothing is easier than to use this grain and forage in a way that involves a loss. Crops of the kind named are now too high to form manure at a reasonable price. It is altogether better to raise manure plants than to purchase them, and we only buy for seed; *i. e.*, a little manure to grow more on poor, barren land.

In using stable manure, we plow it in as soon as it is hauled and spread. Much has been written on the propriety of covering manure eight, ten and twelve inches deep. In garden culture this practice is to be commended, but in field culture, we doubt the soundness of the theory, where the quantity of manure is relatively small. When the dung is covered four or five inches, the earth protects it entirely from the sun, it is moist, rots quickly, and readily diffuses its fertilizing influence both downward and upward, as water either descends into the subsoil, or ascends to the surface through it, by capillary progress. Allowing the roots of crops to expand mostly within ten inches of the surface if the manure be placed five inches below it, it is just half way through their maximum development to nourish their growth.

SALTING HAY.

We frequently find notices of salting hay, and also of the injurious effects, in many instances, resulting from it. We give from the farm report of L. D. Clift, of Putnam county, in the volume of Transactions of the Society for 1855, a preparation that has proved highly beneficial, and obviates the difficulties attending the use of salt:

"PREPARATION FOR HAY IN THE MOW.—I have used, for several years, the following preparation for my hay: *Two parts of slacked or quick lime to one of salt.* The salt to be mixed with the lime until entirely dissolved and the mass becomes a powder. Upon a load or ton of hay, at intervals in mowing or stacking, use from ten to fifteen quarts, dusted evenly over the hay. I formerly used salt alone, but the men would often use too much, so that it was injurious to the stock. The above mixture obviates this—it corrects the acidity and sourness of the hay, and I do not recollect a sick animal since I commenced its use. Horses troubled with the heaves are greatly relieved by feeding upon hay thus prepared, and I am satisfied it is a preventive of the heaves. My horses are kept in the stable the year round, well groomed, and they do far more work and wear longer than when suffered to run during the summer."

AGRICULTURAL FAIRS.

THE following sensible view of the subject of *Female equestrianism* practiced at some of the Northern Fairs, is given by a correspondent of the *Rural New Yorker*. It is a view which will place the exercise in a true light, even to those who can see only good taste and decorum in the performance. The matter of Sales, etc., alluded to, is one of the legitimate objects of the Fair, in fact, the origin of the name, and it needs only a little walking up, on the part of those wishing to buy and to sell, to the advantages offered, to make this feature not only interesting and attractive, but of decided profit to all concerned. We heartily commend to the consideration of our readers whether it may not be made much more prominent. A trial of its advantages at our coming State Fair would unquestionably fix it as a permanent and useful plan. The managers of the exhibition will readily forward any disposition on the part of exhibitors to make sale of animals or wares, due previous notice being given at the time of making the entry.

"The great design of our agricultural fairs is to benefit the community by stimulating the efforts of our farmers and mechanics to higher attainments and greater excellence and perfection in their respective spheres. To excite a laudable emulation among producers and manufacturers,—and to impart to others useful and profitable knowledge, resulting from our own experience. Whatever, therefore, will aid these interests, and promote these results, may with propriety be embraced in the arrangements regulating agricultural fairs.—Now, whether the fact, that a lady sits gracefully and reins and manages her horse skillfully and without fear, will in any way promote the essential interests of the agricultural, mechanical or mercantile community, can be easily decided. It would, no doubt, produce just as much benefit as to see her waltz gracefully, or with ease and skill thread the mazes of the cotillion.

I, for one, can see no imaginable benefit direct or remote, to the riders themselves or to the community, from encouraging this object by the agricultural fairs.

It has found its apology no doubt, in the acknowledged necessity of rendering the fairs attractive. But cannot other attractions be offered than such as are particularly appropriate to the circus? Let it be uniformly and generally understood, that one of the leading attractions of the fair is, the facility it offers for making sales, purchases and exchanges, of various articles of every kind and character on exhibition. Let articles offered, not

for premiums but for exhibition and sale, be so designated, or arranged by themselves. Then they will not interfere with those offered in competition for premiums. Let it be understood that the season of the fair, and the occasion of the fair, offer the best chance presented during the whole year for purchases, sales and exchanges of stock and products of every description. Let it be understood that the leading object is, not an extravagant price, but a chance for actual sale at a fair and reasonable price. And at an auction sale, which should close all fairs, let the owner, if he so inclines, put up his property at his minimum price. If no one bids, it remains his. If any one bids, he has secured an actual sale to the highest bidder. If, in this way, we do not offer all needed attractions to the community, without going outside the objects of the Society, I greatly err. The favorable opportunity offered on such occasions for making purchases and sales, is a leading object, if not a paramount object, at the great fairs in the old world. Let it be a leading object at the fairs in this country.

D.

Rochester, Aug. 7, 1856.

SHADE TREES.

THE Rev. Orville Dewey (says the *Working Farmer*) has donated the earnings of his last winter's lectures to his native village, to be expended in planting shade trees along its streets. This is truly a judicious mode of exercising philanthropy, and is worthy of the greatest commendation. We hope the example of Mr. Dewey will not only induce others to similar liberal acts, but perhaps convince the owners of property facing public roads, that the judicious planting of shade trees would render such roads more attractive, and thus increase the value of their property.

The German method of planting large growing fruit trees on the road side, should be adopted in many parts of the country, for in addition to their beauty and shade, they furnish the traveller with refreshment. The oft-repeated excuse, that fruit trees entice boys, etc., is answered fully by supposing so great a number of fruit trees at the road side as to do away with their being so great a novelty as to induce any unusual number of visitors. Custom in Germany sanctions the "tabooing" of every fifth tree, by the owner of the farm. This is done by tying a white string on one of the lower limbs, and no traveller will touch the fruit on trees so marked. Gen. James Talmadge informed us, that while riding through miles of roads, shaded by fruit trees, he could not induce the stage driver to take fruit from the marked trees.

PAYMENTS FOR THE ARATOR

SINCE AUGUST NUMBER.

Whitaker, Col. J. A., Louisburg,	\$1
Kingsbury, R., Oxford, (E. P. G.)	1
Scarborough, G. W., Eagle Rock,	1
McNeily, Jas. A., Charlotte,	1
Turrentine, J. C., Hillsboro', (thro' J. C.)	1
Brodie, Maj. Saml., Louisburg,	1
McDaniel Patrick, Enfield,	1
Nichols, J. B., Merry Hill,	1
Staton, Baker, Tarboro',	1
Grandy, T. T., Oxford,	1
Sills, Dr. G., Belford,	1
Matthews, Archd., Peach Tree Grove,	1
Boddie, N. W., Nashville,	2
Harris, A. C., Henderson,	1
Wortham, R. J., Henderson,	1
Dunn, P. A., Forestville,	1
Lamb, Mordecai, Fentress,	1
Atkinson, P. A., Falkland,	2
Gary, John R., Halifax,	1
Hadley, Owen, Powellton,	1
Peace, William, Raleigh,	1
Johnston, David Sr., Madison, Ga.,	1
Robertson, Thos. C., Huntsville Depot,	1

INDEX TO SEPT. NO. 1856.

Annual Address,	569
Agricultural Fairs,	574
Cows for the Dairy,	557
Cows, hints in feeding,	557
Clover seed, gathering, &c.,	563
Communication, (B. A. W.)	570
Facts in Chemistry,	551
Fruit Cans, self-sealing,	568
Guano, use of,	559
Horses, Raising,	566
Lime, application of,	561
Oxen vs. Horses,	560
Peat and Peat Charcoal,	548
Pigs, mode of keeping in Mexico,	586
Poor Orchards, how to manage,	567
Preparation and use of Manure,	572
Root Crops, cultivation of,	565
Salt, functions of in Agriculture,	546
Sheep of Great Britain,	558
Steam Plow,	563
Sun Flower,	568
State Fairs,	568
Salting Hay,	573
Shade Trees,	574
Tobacco bed, extraordinary,	557
The State Fair,	569
The Army Worm,	569
The Scientific American—Early Rising, &c.,	570
Vinegar Plant,	567
Wheat, Culture of	551
Wool, from different food,	553
Wheat and Peas,	560
Wheat in Eastern Virginia,	560
Work for September,	569
Was Capital in Farming,	579


THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.


THE Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857.  Here are fine chances to secure cash prizes.


THE SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

 TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

 Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

WYCHE'S CULTIVATING PLOW.

PATENTED 26TH FEBRUARY, 1856. (The Bladed Plow,) awarded \$20 premium at the last N. C. State Fair; with cutting blades in the place of a moldboard; cuts, divides and turns over the soil; depositing the finer parts in the furrow, and turning over the turf, clods, &c., on the surface. Is cheap, light, and lasting, and easy to both driver and team. Admirably adapted to almost any purpose for which the plow is used.

For license to sell, with farther information, address
W. E. WYCHE.

Brookville, Granville Co., N. C.

J. H. Gooch, Oxford, N. C., solicits orders for the above plows.

June 16, 1856.

4-44f.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers' prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT-ented 8th of January, 1856)—called the Mole Plow; with vertical cutters near the edge of a horizontal share, for dividing the furrow slice, and a curved cutter on the rear of the share for turning the whole in towards the plow, or as far on the opposite side of the share as may be desired. Adapted to siding, listing, breaking turf or hard land, subsoiling, and many other purposes. Is light, cheap and strong; and supposed to be the most perfect pulverizer in use.

For license to sell, with directions for manufacturing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-4tf.

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,

SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-4f.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop known as **JENKINS' OLD STAND**, would announce to the people of North Carolina generally, that he is prepared to manufacture in a beautiful and durable manner, Coaches, Baggies, Rockaways and vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c., of every description, and as my facilities for repairing are good, the public may rely upon having their work done at the *lowest possible rates*, and in a manner *unsurpassed* by any other establishment in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings, of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4-4f

W. L. POMEROY,

PUBLISHER,

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dispatch at this office.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, OCTOBER, 1856.

NO. VIII.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

HOGS, PORK AND BACON.

EDITORS SOUTHERN CULTIVATOR: There is no subject of more practical interest to the Southern planter than the proper mode of making his home supplies. The immense quantity of pork and bacon of foreign growth sold in the State of Georgia affords a forcible illustration of our want of a well regulated system of plantation economy. Why not raise our own pork? Is there any want of adaptation in our soil, climate, or the labor we employ, or any other inherent obstacle in the way of accomplishing what we all concede to be a most desirable object? That there are no such barriers in the way, is proved by the fact that many, very many of our judicious planters make their own supplies, and some of them a surplus, and at the same time realize a large income from their cotton crops. It is not necessary to appeal to the lessons of political economy to prove that no State can be continuously prosperous which draws a large portion of its sustenance from a foreign source.

Is it our interest to raise pork, or is it good policy to remain dependent on the neighboring States of Tennessee and Kentucky for this great necessary of

life? The experience of a vast majority of the planting community, especially that experience which extends through a series of years, will establish the proposition that it is cheaper to raise our pork than to buy it. Irrespective of the great outlay of money in providing an ample supply of pork, there are some minor considerations which should not be overlooked. The inconvenience of procuring bought hogs at the proper time for killing and the trouble and risk of transporting them from where they are bought to where they are consumed, however near the two points may be to each other, are objections of some moment. If these objections are removed by purchasing bacon, I reply that we can manufacture a better article than we can purchase, an article containing more solid meat, less salt and water, and affording a more healthful and nutritious diet for our negroes. It is considered by many, and I think properly so, that some disgrace is attached to the habit of purchasing meat for plantation use in the absence of any accidental cause which may have rendered it impossible to make it. I do not use the word disgrace in its offensive sense, nor as implying any act of moral delinquency, but as merely expressive of that sense of humiliation which we all feel when we are compelled, however disagreeable it may be, to do that which, by proper prudence, we might have avoided.

In Middle Georgia, we have but little excuse for not raising our pork. Not to do so under the favorable circumstances by which most of us are surrounded argues some obliquity of judgment—some want of agricultural skill—an ignorance of the plain prin-

ciples of domestic economy, and always exposes us to the suspicion of curtailing the necessary allowance of food meted out to our negroes. It is an undeniable truth—the whole world knows it—that generally when the planter makes his own supplies, his negroes and stock are not so often put on short allowance and are much better cared for. Do we not gain something in protecting ourselves against the influence of this cruel suspicion?

In reading Mr. Eve's very well written address on the subject of Pork Raising, published in the July number of the *Cultivator*, I was disappointed in not finding his plan of making pork. It unfortunately happens that our most fluent writers have not sufficient practical experience to furnish the minute details of any system of agriculture, and those of us who have the experience are not practised writers and have but little facility of style and no scholastic grace in communicating what the labor and toil of years have taught us.*

It is too much our habit to suffer our hogs to take care of themselves. They require regular attention. Whatever attention they require, however regular and constant it may be, takes but little from the labor which the crop requires. I concur with Mr. Eve in the opinion which he expresses that in-and-in-breeding exerts a deteriorating effect on a stock of hogs, and, therefore, we should occasionally introduce a boar from a different stock. But I attach less importance to the occasional infusion of extraneous blood than to good breeding sows. In order to have sows of good size, they must be separated from the boar until they are grown. If they are suffered to have pigs at an immature age, they become stunted and are ever afterwards too small for breeders. This is an important consideration and one which is too often disregarded, as I know from bitter experience. A large sow is a better milker and much more fruitful than a small one.

Success in raising hogs depends very much on the nursing which the sow and pigs receive. No one can be successful in raising hogs unless he separates his sows and pigs from his stock hogs. Both sows and pigs require more food than they can secure in a general scramble with the whole stock, and in cold weather the pigs are liable to be overlaid by larger hogs crowding upon them in the same bed. Every farmer should have a small woods pasture with water in it, even if it is several hundred yards from his crib lots, and should have a small house contiguous to it as a depository for corn. In this lot he should

turn in his sows before they have pigs, together with those he has selected as breeders. My lot is a quarter of a mile from the regular feeding place. After the pigs are marked and spayed, or large enough to shift in a crowd, I turn them and my sows with the stock hogs and have a pen at the regular feeding place to which the pigs have access and where they are separately fed. I expect to use a large kettle for boiling for the use of my sows and pigs, and to locate it at my woods pasture lot. They will thrive much more on slops than on unground corn, and the same kettle can be used for boiling for my hogs intended for killing.

I invariably sow a field of rye for my hogs. I prefer rye for this purpose to any other grain, because it can be sown in December and as late as the first of January, when the cotton crop has been gathered and when the planter has leisure to plow it in. After it is matured it will remain in the field exposed to all the vicissitudes of weather without injury, and my hogs have ample time to glean the wheat and oat fields before they are turned in upon the rye. It is a more hardy grain and a less precarious crop than either wheat or oats, and the stubble is understood to contain more fertilizing properties than any other.

The gleanings of my wheat, oat, rye fields and orchards, with crab grass and the aid of a very little corn, keep the stock in a growing condition until the first of September, when I separate my hogs intended for slaughter and commence feeding them with an increased quantity of corn. As soon as my growing corn will admit it, a pea field is opened for them where they remain until the last of October, when they are confined to a close pen, and furnished with an unstinted allowance of corn.

Last year I hauled from my swamp fields several loads of pumpkins, and had some of them cut up every day with a spade and fed to them. •They eat them with a most voracious appetite even when they were surfeited with corn. While the pumpkins afforded a wholesome change of diet, they acted as a corrective for overfeeding, and their effect in the improved condition of the hogs was obvious. They were not intended as a substitute for corn, and consequently I did not diminish their usual supply. I am giving my plan of fattening hogs as it is, with all its imperfections. I know that it admits of improvement. It is my purpose to feed my fattening hogs next fall *occasionally* on ground or unground corn, boiled thoroughly and distributed in troughs in the shape of slops. One of the most successful pork raisers I ever knew fed his fattening hogs with corn soaked in cold water, and I can testify to the great advantage derived from feeding pigs on corn made soft by soaking in common water.

*Our correspondent need scarcely rank himself among the latter class. There is here an ample sufficiency of "scholastic grace" and lucidity for all practical purposes. We hope to hear from him regularly.—EDS. SO. CUL.

From experiments made by Henry Colman, Agricultural Commissioner of the State of Massachusetts, and Henry L. Filsworth, former Commissioner of Patents, it appears that one bushel of corn well ground and boiled will make as much pork as two bushels unground and not boiled. I believe that this is an exaggerated estimate, although it comes to us in the imposing shape of official experiment.

If the planter can save one-half the corn consumed in fattening his hogs it would, in my opinion, be equivalent to the labor of at least one hand on a plantation which requires the labor of 15 or 20 to cultivate it, and would enable every planter in Georgia who makes full crops of cotton, by judiciously directed effort to make his own pork in ordinary seasons and on ordinary land well cultivated.

I have but little confidence in potatoes, ground-peas and turnips as substitutes for corn. The same labor employed in making them will, in my opinion, yield a more valuable product in corn. In raising pork, I think there can be no substitute for the corn crib. Pumpkins and the cornfield pea are valuable auxiliaries, and the very little additional labor it requires to cultivate them should recommend them to every planter; but they are not substitutes for corn and there is nothing that we can raise with the same labor which can be so readily converted into good firm pork as corn. I attach, however, great importance to the pea crop and consider it almost indispensable to my success in raising hogs. To raise them costs me but little more than the labor of dropping them. I deposit them in the first furrow made by the plow when my corn is plowed the second time, and cover them with the second furrow.

I have made many experiments in the culture of the pea, and find this to be the cheapest and most economical mode of making them without interfering with the proper culture of the corn crop. I have never hesitated to turn my stock hogs on peas of any variety before the 1st of December, and after that time on the Red or Tory pea, which is not liable to rot and will remain sound on the ground during the winter. I endeavor to have a fresh uncleaned pea field to turn in after Christmas and supply them bountifully with salt and ashes. If I have ever suffered any loss from permitting my hogs to run on peas, I am not aware of it; on the contrary, at no period of the year are they in a more thriving condition than the 1st of February, when they have had the benefit of a pea field during the preceding month.

I do not rely on pork as a source of income, although I usually have some to spare. I look to cotton for my income, and endeavor to make full crops, and in proof of my success I will mention that generally I congratulate myself when I have gathered

the last pound, that I have no more to pick. I am not one of the "ten bales to the hand planters," and my negroes do not work all the time as if they were fighting fire, but on pressing occasions they are required to work with an accelerated pace. I mean by a full crop, what my hands can cultivate well without disregarding the preservation and improvement of the soil cultivated. If I leave no monument of my enterprise when I become forever separated from my plantation, my desire is to have no scarred and gullied fields as inglorious memorials of my injudicious system of culture. The aim is a noble one, whether it is reached or not.

Permit me to refer to some of my plantation statistics: In doing so I am not so much prompted by a sense of ungrateful vanity as a desire to illustrate the scale on which my experiments have been made. In 1854 I killed eighty hogs averaging 174 lbs. to the hog, and yielding 13,920 lbs. in pork. Last year I killed seventy-five hogs, averaging 204 lbs. and giving me an aggregate of 15,306 lbs. of pork, and about 3000 lbs. more than I require for my own consumption. The average of the former year fell short of the last year, as you discover, very considerably. There were several reasons for this disparity. First, the hogs of the former year were younger by several months than those last killed. I prefer when my hogs are confined to a close pen for fattening, that they should not be less than two years old and ranging from that to three years of age, and in this my experience is in conflict with the opinion of very many better planters than I am. Secondly, although the first lot of hogs were well fed on corn, they were fed on nothing else, while the pen of last year was occasionally supplied with pumpkins. The stomach of every animal becomes clogged when fed with unvarying constancy on the same aliment and refuse to perform its proper functions. To avoid this evil, I will hereafter in addition to this hard corn, with which my fattening hogs are supplied, give them occasionally boiled corn, boiled peas and pumpkins, and shall be disappointed if I am not rewarded by an increased quantity of pork.

It is scarcely necessary to advert to the fact which every planter knows, that hogs consume less and fatten sooner in warm than in cold weather. Unfortunately every planter does not avail himself of this knowledge. At least one-fourth of the pen should be ready for slaughter about the first of December, when there is almost invariably a cold spell of weather. In killing a portion of our pork at this time, we gain, beside a portion of corn, an increased length of time for smoking and drying it, and *thorough drying* is, in my opinion, one of the secrets of making good bacon.

I shall not undertake to give you the details of my method of making bacon, for recipes for this purpose are as common and as various as toothache remedies. In its essential particulars it does not differ from that usually adopted in this region of the State. I will briefly state one or two particulars in which I depart from the usual method. After killing, if the weather is very cold, I cut up and salt away as soon as I conveniently can. If there is the least doubt in relation to the proper temperature of the atmosphere, I suffer the hogs to remain suspended on the poles during the night. My opinion is that they will more readily become cold suspended in the open air than when cut up and spread in the smokehouse, especially if an incision is made the whole length of the back with a knife. If cut up and spread outside of the smokehouse, the pieces absorb too much moisture. This practice of suspending the hog from a pole is very common in a colder climate than ours, and where my reason for it will not hold good. There, it is said that when the hog is suspended in a warm state its fluids in *settling* become more equally distributed and an inordinate accumulation is prevented. I do not wish you to understand me as assuming this as a principle of animal physiology or as being prepared to defend it.

In making bacon, I attach no little importance to thorough drying, and very often when my bacon is not sufficiently dry, suffer many of the warm days of February and March to pass before the shoulders and hams are packed away. The sides are not disturbed in the smokehouse after they are hung up until we use them. To prevent injury from the fly, when my joints are taken down, I have strong hickory ashes heated in a pot or oven situated conveniently to the smokehouse, and with a small paddle the heated ashes are applied to every ham and shoulder. The object is to destroy any egg which may have been deposited by the fly during the sunny days of February or March. It is true that this can be as easily accomplished by immersing the joints in boiling water, but I have a strong objection to the wetting effect of this process. In packing away my hams and shoulders, I use unleached ashes and have sustained but little injury from the decomposing effect of the alkali. I have never used sugar or molasses in manufacturing bacon. They impart an unnatural flavor to the ham, which, to my taste, is not so delicious as the natural flavor, and I am sure that a well cured, well cooked, juicy ham made without the agency of any foreign ingredient except salt, is equal to and more grateful to my taste than any sugar cured ham which has ever been served up at the Astor House or St. Nicholas.

I consider it good policy to avoid the necessity if possible of using the new crop bacon until about the

first of March, and I usually weigh out old bacon to my negroes up to that time. There are two advantages in this plan: we are not forced to mete out our new crop of bacon in a green and uncured state, and in the event of an insufficient supply of pork arising from a short crop of corn, or any other casualty, the old bacon on hand may make up the deficiency and give another and probably a more propitious year to recover what we have lost in corn or stock hogs.

BRADBURY.

Bradbury Hall, Pike Co., Ga., 1856.

CABBAGES FOR FEEDING PURPOSES.

A PAPER is published in the Transactions of the Highland and Agricultural Society of Scotland on the relative value of the cabbage for feeding at different stages in its growth. The head, as is well known, attains a very large size before its heart is formed, and after that time increases comparatively little in weight, the outer leaves decaying to a greater or less extent. But although this is the case, it is not customary to make use of it till the heart is formed, the propriety and economy of which practice has been called in question, and, as it seems now, very properly. The conclusion arrived at, in fact, is that the cabbage in the younger state "may be used even when its weight falls considerably short of that which it may afterwards attain," from the chemical superiority of its constituents at that time. "In estimating the value of the field cabbage in relation to other cattle food, it may be most safely compared with the turnip. The full-grown cabbage, taking together both leaves and heart, is almost exactly equal in value to the same quantity of turnip, while the young cabbage is equal to nearly double its weight of that root. It must not be supposed, however, that this is to be assumed as invariable; so far from this being the case, it is quite possible that the average difference may not be so large as it has proved in the present instance: and while I should be sorry to have it supposed that the single analysis now given should be taken to indicate the invariable relations in value to the young and old cabbage, they merit attention as pointing to a fact, which, if confirmed by further experiment, may prove of considerable practical importance."

BENZOLE FOR INSECTS.—M. Reynal, a veterinary surgeon, has discovered that benzole is fatal to parasites in animals, and he has employed it with success on animals. It is more safe than tobacco juice or mercurial ointment to be used on calves and sheep.

PROGRESSIVE PLANTERS—LETTER FROM DR. PHILIPS.

EDITORS SOUTHERN CULTIVATOR: To whom honor is due, palsied be my pen if I fail in rendering it, according to my ability. In my steam trip to your State I saw much to admire, and would be gratified to spend an entire year in visiting the planting region of the South, in examining the workings of Cotton, Sugar and Rice.

Having been devoted to our calling—agricultural improvement—for these 25 years, and taken pains to examine as carefully as time and circumstances would warrant, I hope to be excused if I call names. I do so not to needlessly bring private men before the public, but that their good example may be profitable to our people. I will go farthest from my home, and yet in sight of my old home. Dr. Parker, in Columbia, has one of the choicest herds of milk cows I have seen; his arrangements are worthy of examination, and the visitors to Columbia would profit by going out to his dairy, where they will see Brahmin and Devon and Durham cattle well provided for and yielding a handsome profit to their spirited and worthy owner. He has a few fine hogs. Dr. P. is improving lands and being compensated, tho' the same lands were not remunerative when I was a boy, for I knew almost every foot, once my father's. I could name an estate near Augusta, where much attention is being paid to stock, where waste lands have been made to produce equal to our Mississippi swamp lands, through the indomitable energy of the talented owner, but I am forbidden to allude thereto, and will cross the noble Savannah and refer to a planter who shows an annual return from sales of corn, hay, shucks, pumpkins, &c., equal to our ten bale planters of Mississippi. I allude to Col. Wm. J. Eve, of course; and here I thank him for his appreciation of agricultural labor, by his kind treatment of one of its workers. I feel that the very kind attention to me was a tribute of respect to the cause I love to follow.

Col. Eve proves conclusively that a varied husbandry will pay in the South as well as elsewhere; and I hope as he becomes more conversant with the management necessary that his pay will increase.—It requires more talent, thought—mind—and labor to keep up a varied husbandry than to make money by cotton, sugar or rice. His wood lands must be laid down to pastures, and when clover, timothy, herds grass and blue grass are thoroughly and properly tried in the swamps of the Savannah, hogs and mules will be reared in connection with wheat and oats and corn, cheaper than in Kentucky. Clear up all undergrowth, deaden all useless trees, and sow down clover and timothy, then blue grass as follows:

10 to 12 lbs. of red clover with 12 to 15 lbs. of red top (herds grass) or 10 to 14 quarts of timothy, afterwards 5 to 10 lbs. of blue grass seed. Use no plow; sow on the land in October, and when the two first are about in bloom feed off from say 15th of April to 15th of June, not too closely fed off;—the trampling of cattle will benefit blue grass, fed again in the fall, and as the two first wear out watch for spots where no blue grass and scatter seed; be careful in feeding blue grass to not let stock on for about 30 to 40 days when in seed so as to have fresh seed until your land is well set. Thus will he be able to rear stock for market and for home use.—This is the great desideratum in the South. We must try all the grasses.

Georgia will make a better investment by paying \$1,000 or \$10,000 to some man to test grasses thoroughly in the proper way, than in any other investment. We expend far too much capital to raise corn, to kill up our mules and make our own meat.

Pastures are the cheapest, and when planters see for themselves that grasses can be grown profitably, we will then have taken the march to independence; and it is sheer folly for us to speak of independence when we have to buy mules, meat, butter, &c., from abroad. A few such men as my friend Col. Eve, and we will see less dependence on cotton, and our country be the gainer thereby.

Yours truly,

M. W. PHILIPS.

Edwards, Miss., June 1856.

CHINESE ARTIFICIAL BREEDING OF FISH.

This art, which has lately been introduced with great success for ichthyifying the rivers of France, Scotland and Ireland with salmon and other fish, and claimed as a recent discovery, has been practiced in China for centuries. We find a record of this in a work published thirty years ago. It is stated that "the Chinese fishermen carefully collect the spawn of fish and put it into the shell of a fresh hen's egg then stop up the opening, and set it under a sitting fowl. After a certain number of days they break the shell in water warmed by the sun; the young fry are soon hatched, and are kept in pure fresh water until they are large enough to be thrown into ponds. The sale of spawn for this purpose forms an important branch of trade in China."

MANURE HEAPS.—The usual offensive odor and evaporation from them, may be entirely prevented by sprinkling over the dung heap, by means of an ordinary water can, a solution of a pound of common green copperas in a gallon of water.

A CHINESE proverb tells us that every man is the architect of his own fortune, for character is fate,

HILL SIDE DITCHING—HORIZONTALIZING LAND.

EDITORS SOUTHERN CULTIVATOR: As requested by you and promised by me, I now, after some delay, attempt to give you in detail, my system of hill side ditching and horizontal culture. And by the expression "my system," &c., I do not wish to be understood as claiming originality, for I confess with much pleasure, that I have studied with much care, the various systems as given in Southern agricultural journals, and have by practical experiment, demonstrated the value of the most of them. And my study and practice has settled me in the conviction that the system I now practice is the most to be relied on in the Southern States.

• Than hill side ditching and horizontal culture there is no subject of grave importance to the Southern Agriculturist. To keep land from washing, should and must be the first step towards improvement, and so far as I know, this fact is acknowledged by everybody. But the question in the minds of many seems to be, can it be done? And the fact is to be regretted, but is nevertheless true, that many of us, instead of experimenting on this subject, and convincing ourselves and the agriculturist whether or not the hills of the South may be saved and thus benefit our race, we notice with a sceptic's eye the labor of others and not unfrequently express our doubts as to the utility of the operation.

And if it is conceded by all, which is certainly the case, that the hills of the South can alone be reclaimed by keeping the soil where nature's God placed it, it follows that every system which promises, to any extent, that result, should receive the most respectful attention.

I despise from my heart of hearts, the disposition that seems to be inherent in the very nature of some folks, which prompts them to conjure up difficulties and cast them in the way of every improvement.—They do not intend to make any improvement themselves, and they glory in ridiculing the man that does. They had rather be on earth and cry "humbug," than to be in Heaven and cry "holy art Thou," &c.

But apart from this unpleasant consideration:

To give a correct idea of my system of ditching and horizontal culture, I shall have to do that which has been often done, namely: give a description of the implement with which the work is performed. I use the rafter level, with a spirit level attached, and it is graded in the following way: When made it should spread 12 feet and be placed on a level floor, then mark across the centre of the bubble in the spirit level, then reverse the compass, or rafter level and mark again as before. The centre between these

marks gives the dead level. You will then move the compass, until the bubble stands at the centre, and on a level, then place an inch block under one end of the compass, and make a mark across the dial at the end of the bubble next to the centre, then raise another inch and raise as before, and so on, until you raise three inches tall.

Then get a basket of $\frac{1}{4}$ inch pins and you are ready for the field.

Before you commence ditching take a general survey of the ground you intend to ditch, and determine in your mind as near as may be, the distance the ditches should be apart, &c.

Then place your compass near the top of the hill where your land commences to wash, and move the front end until the end of the bubble falls to the two inch mark, and make the boy with his basket or sack of pins drive down a pin at each end of the compass. Then move the hind end where the front end was, and move the front end until the bubble rises to the two inch mark again, and drive down a pin as before, and so on until your ditch is located. After which take a two-horse plow and throw a furrow slice down hill, plowing up the pins, and repeat the plowing three or four times and clean out with hoes. The ditch should be about two feet wide, and sloped downwards to the upper bank so that the water may have a hard bank to run against below, and thus lessen the chances of breaking over, &c.

The distance of the second ditch from the first, must be determined by the apparatus. No definite rule can be given, as that will depend upon the declivity of the hill, and the volume of water to be conveyed out of the field. It should be close enough, however, to catch the water that falls below the upper ditch before it accumulates enough to wash, and so with all the other ditches.

After the field is thus ditched, lay off guide rows—one or two between each ditch, and perfectly level. These guide rows will cross the ditches about half way out. Your guide rows all laid off, you will then bring four good plowmen in the field, with a good steady mule or horse each. If your rows are to be four feet apart, tie a light pole eight feet long to the bits of the bridle of one of the mules, and make a boy walk parallel to the mule in the upper guide row and a plow behind throwing out, which makes your rows precisely four feet wide. The other two plowmen commence on the upper side of the second guide row, with a pole and boys as the other, and they thus lay off until they meet at some point between the guide rows, and then fill out on the levellest line. We commence, then, between the next two guide rows and lay off as before, and so on until the whole field is laid off.

The above is my simple plan of ditching and horizontalizing by which I have stopoed the progress of many a gully, and made the red hill to rejoice with waving and luxuriant crops of cotton, corn and wheat. I have full confidence in the system, for I have tried it, and what my eyes have seen that do I know.

On this place, I have ditched and horizontalized a hundred acre field in the above way, and Dr. M. W. Philips paid me a visit the other day, and examined it, and he can say whether or not I have saved that field.

Land ditched and horizontalized in the way described can be saved. The water stands on the ground in a solid sheet, until the water furrow is full, and then it falls gently in the one below and the ditch stands ready to catch it before it accumulates enough to wash.

I have now done, and if anybody has a better plan let them give it, and we shall be obliged. Good night. Yours, &c. G. D. HARMON.

Utica, Miss., July, 1856.

COTTON PLOW AND SCRAPER.

EDITORS SOUTHERN CULTIVATOR: The cotton planters of the South have long wished for an implement that would scrape cotton closely and nicely, and at the same time clean and pulverize the row, whether three or six feet wide; thus doing the work at a single round that it has always taken two rounds to perform. That implement was never found until Yosts invented the "Plow and Scraper" combined. With this implement a hand and mule can do the work in a cotton field of two hands and mules with any other plow or scraper. This of itself makes "Yosts' Plow and Scraper" the most valuable cotton plow that has ever been introduced in the Planting States; and then, if you take into account the capital invested in the extra mule and hand, it is a gain of one-half. I have never known a plow to give such general satisfaction as has the "Plow and Scraper."

Mr. Samuel Redus, of Copiah Co., Miss., who is engaged in a cotton factory and whose business it is to travel extensively over this State, stopped with me last night, and in the course of conversation, mentioned the fact that he had seen many planters, in different sections of the country, that were using "Yosts' Plow and Scraper," and they all, without a single exception, pronounced them the best cotton plow ever invented.

I have had in 15 acres of cotton and $7\frac{1}{2}$ of corn to the efficient hand, and Mississippians say that this has been the most unfavorable spring for the cultivation of crops ever known. I have been "in the

grass," but with "Yosts' Plow and Scraper" I have got out, which I am sure I could not have done without it. These plows must and will become the cotton plow of the world. The beauty and utility of them, among other things, is to be found in the fact that they can be used to great advantage as a plow of all work.

After using them in the scraping and pulverizing your cotton rows, you may turn on your cotton behind the hoe hands, with the bar of the plow next to the cotton and the scraper in the middle of the row, and mold the cotton most beautifully and open the water furrow—leaving a nice flat bed to the cotton—at a single round of the mule.

This implement is not unwieldy—any mule worth \$75 can draw them with ease. Now if I should speak of what has been done in Mississippi in the cultivation of corn with those plows your confidence might be shaken, therefore I shall leave the subject with you and your readers, until they are introduced in Georgia, which will certainly be done the ensuing year, and you can then see for yourselves.

It is very probable that one of those plows will be on exhibition at the Montgomery and Atlanta Fairs in October next; if so, I may represent it, and then I intend to give to the planters of Georgia and Alabama a practical demonstration of what can be done in a cotton field with them. Had this plow and scraper been introduced in Georgia this year, I have no doubt as to the certainty of 20,000 being sold in that State next year. The cotton planters of this State, if I am not mistaken, are the last men on earth that could be humbugged with a cotton plow. They can tell at a single glance at a plow what it will do in a cotton field.

In conclusion, permit me to say that if any man on earth is benefitted by "Yosts' Plow and Scrapers," it is the poor man who toils alone in the field with his scooter, shovel and sweep. With it he can add another hand and mule to himself with \$10, and do the work of both.

I have no personal interest in this matter further than to benefit agriculture. Yours, &c.,

G. D. HARMON.

Utica, Miss., July, 1856.

KICKING COLTS.—Mr. W. L. F. Jones, of Asbury, gives us the following mode of breaking colts of the bad habit of kicking. Whenever a colt kicks he takes hold of the head and neck gently, by clapping his arm around and holding on to the nose until he ceases to struggle, patting him occasionally and speaking kind words to him. By doing this a few times, he says the worst case can be cured.—*Prairie Farmer.*

BEES AND THEIR MANAGEMENT—LETTER FROM MR. LATASTE.

EDITORS SOUTHERN CULTIVATOR: I am engaged in the honey growing business in a small way, and desire information relative thereto. Will you or some of your correspondents please answer the following interrogatories through the Cultivator?

- 1st. What kind of Gum or Hive is preferable?—I am losing two-fifths of all my young swarms.
- 2nd. How should I manage to retain them?
- 3rd. What is the cost of buckwheat?
- 4th. Where can I obtain it?
- 5th. When is the proper time to plant it?
- 6th. On what kind of land will it grow best?
- 7th. How should it be planted—if sown broadcast, how much per acre—if in drills, what distance between drills and what distance in the drill should it have?

8th. What culture is necessary after planting?

9th. Is Buckwheat the best plant for the production of honey?—if not, what is?

10th. Are any of the patented bee hives or palaces preferable to the common box gum? and if so, which is best? and what is its cost? and where can I obtain it?

In beginning to farm I have commenced my subscription to the Cultivator, and when my year is out and the \$1 is not in hand for a new volume just "nudge" my elbow, but don't discontinue the Southern Cultivator. Respectfully,

A. T. SHERRILL.

Ascalmore, Miss., 1856.

MR. LATASTE'S REPLY.

OF all the patent hives I should certainly give preference to Miner's Cross Bar, but for those who may wish to save expense I would recommend the common box hive, but then it must be well made, according to the directions furnished in Miner's Manual, which book Mr. Sherrill should immediately procure, as it will give him all the information he may require in the management of his bees. I know of no good reason why Mr. S. should lose so large a proportion of his swarms. I rub a small quantity of honey in my hives and rarely have my bees to leave me, and when they do, it is only the third swarm that come out late in the season, and in a majority of cases are not worth preserving. When they determine to leave, the best thing to do is to bid them farewell and let them go.

I look upon all Bee Palaces as so many splendid humbugs. In this category I do not, of course, include the Cross Bar, for it is an excellent hive, and I would always recommend it where a patent hive is desired. The price of the right for making this is

\$2, the price of the hive will depend upon the style in which it is built, although it may be made almost as cheaply as the common box. I have a few rights on hand which will be supplied at the price named.

In the best honey districts of France, sainfoin is the favorite feed for the bee. In our Northern States the white clover has the preference. Buckwheat is very good, and as it matures here better than either the sainfoin or clover, I think it good policy to sow a small quantity. It may be sown in July or August, and should be treated in all respects like wheat. I have sown it among corn, and had it to do very well—perhaps the shade afforded by the corn had some influence in the result. I have no doubt it would do very well sown in drills, with such after culture as we give peas.

Wishing Mr. Sherrill great success in his new field of operations, I am respectfully,

V. LATASTE.

Cedar Green, August, 1856.

PAVEMENTS AND HEALTH.

EVERY city should endeavor to have its streets well paved, because health and pavements have an intimate relationship. In the city of Rome the utmost watchfulness is exercised respecting the pavement of the streets, because it has been found that malarian fever is sure to visit every unpaved locality in it. In the city of Liverpool, England, narrow and unpaved streets in which the typhus fever used to rage the year round, were rendered healthy by paving—the fever disappearing with the entrance of the paving stones.

We are confident that any city having clean, well-paved streets and a plentiful supply of good water, is just as healthy, if not more so, than the majority of rural villages. Stagnant pools of water are the well known sources of miasma; paved streets carry off the surface water that would otherwise become stagnant in numerous nooks and hollows.

Many villages once afflicted with fever and ague, have become free from it after their streets were graded and paved. We recommend this subject to the attention of all cities and villages troubled with malarian fevers; they will find it to be of vast importance to look well to the condition of their streets.

Scientific American.

THE editor of the Ohio Farmer mentions as having seen at Cincinnati, Duchesse D'Angouleme pears that would weigh over a pound, on trees only two years old from the bud.

IMPROVE YOUR PLOWING.

"WHAT do you plow for? What *earthly* purpose do you expect to subservise by tramping all day long to and fro across that field—after team and plow? Why don't you throw your grain on, harrow the ground, and spare yourself and team?" The first and paramount object in plowing is to effect a minute division of the soil. In this state it is not only more easily penetrated by the tender roots of grain and grasses, but more permeable to air and moisture. Look at the never failing fruitfulness of our river bottoms. These alluvial soils have been made by the long continued overflowing of turbid or muddy waters, which have deposited the earthy particles they held in solution—so finely divided, so completely dissolved and mixed as to form a kind of paste—layer after layer, until some of them are of great thickness. These lands owe their extraordinary and enduring fertility to this finely divided state and thorough and complete intermixture, and not, as has generally been supposed, to an inexhaustible supply of fructifying ingredients. For according to analyses of some of these "bottom lands" in Ohio, by Prof. Wells, they were found to differ only slightly from the sterile soils of New England. Their great productiveness therefore must be attributed mainly to their extremely fine division. Now, the nearer we bring our common, arable soils to the same condition, as to mechanical texture, the more fruitful will they be; and this is to be done by careful plowing, rolling, harrowing, &c.

Second, plowing admits the easy descent and escape of surplus water; of the free circulation of air by which the natural powers of the soil are greatly stimulated, and the growth of plants promoted. The presence of the oxygen of the air in soils, and its frequent removal by plowing, constitute one of the chief conditions of the productiveness of the land. Seeds do not germinate when placed beyond the reach of oxygen, and manures will undergo no change by which crops are benefited. Oxygen, when it can freely enter a soil, unites with its organic matter and forms carbonic acid, which the roots take up. The more complete the oxidation of a soil, the more fertile does it become; but a full supply of oxygen cannot be obtained unless the soil is kept open for the free admission of air.

The aeration of the soil is held by some, to be the prime object of plowing. There are some soils which contain weak oxides of iron and of manganese, which are poisonous to vegetation. By turning up these soils and exposing them to the

free admission of air, the further production of these oxides is prevented, and those existing are rendered harmless by the absorption of an additional quantity of oxygen.

Again: all soils contain a greater or less proportion of compound mineral substances—the debris of crystalline rock—such as hornblende, mica, felspar, &c., &c., in a state of decomposition or more complete degradation. It is by the continued decomposing of these materials that exhausted fields by lying in fallow, or unoccupied, become renewed and produce again with youthful vigor.—Plants derive new supplies of food which before was locked up. This process of decomposition is wonderfully increased by the act of plowing, whereby air and carbonic acid comes in contact with the particles.

All these purposes obtained by plowing are the more perfectly won as the operation is the more carefully and thoroughly done. The whole body of soil should be cut up and turned over, and to effect a more complete pulverization the furrows should be narrow and of an exact width from end to end.—*Prairie Farmer.*

INSTRUCTIONS FOR SAVING GARDEN SEEDS.

WHEN the seeds are ripe, gather them without unnecessary delay; otherwise the pods will split open and their contents be scattered upon the ground. Do not gather indiscriminately, but take only the finest looking heads. By this selection of the best plants and the best seeds, good varieties may be even improved, and they certainly will not deteriorate. In this way many of our choicest vegetables have been obtained. The practical stock-breeder's motto is that "like produces like," and he breeds from those animals only which possess the points he wishes perpetuated. Thus, if you select the earliest peas from the earliest vines for a number of seasons, you can obtain a variety ripening several days earlier than that with which you commenced. It has been done once, and may be done again.

Place the seed vessels, as soon as gathered, upon a cloth in the shade, so that they may become perfectly dry, at which time thresh out the seed, by means of a small stick. Winnow out the chaff and small or defective seed, and put the remainder in drawers or small paper bags. Every kind should be labelled with its name and the year when raised—in this manner, '*Early Salmon Radish, 1856.*' This will prevent all possibility of the inexperienced cultivator mistaking beet for cabbage seed, or

sowing that which by the lapse of time has lost its powers of germination. Keep these drawers or bags in a cool, dry apartment, where no injury may be apprehended from moisture or the attacks of mice. With care seeds may be preserved for several years, according to the annexed table.

The vitality of seeds, under favorable circumstances, may be depended upon for the following periods:

Parsnips, Rhubarb, and other thin scaly seeds for one year.

Babin, Basil, Beans, Cadroon, Carrot, Cress, Indian Cress, Lavender, Leek, Okro, Onion, Peas, Pepper, Rampion, Sage, Salsify, Savory, Scorzoner, Thyme, Tomato, Wormwood, and small herbs generally, for two years.

Artichoke, Asparagus, Corn Salad, Egg Plant, Edrive, Indian Corn, Lettuce, Marigold, Marjorum, Mustard, Parsley, Rosemary, Rue, Skerritt, Spinach, and Tansey, for three years.

Borage, Borecole, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Radish, Sea Kale, Tarragon, and Turnip, for four years.

Beet, Burnet, Celery, Chervil, Cucumber, Drill, Fennel, Hyssop, Melon, Pumpkin, Sorrel, and Squash, from five to eight or ten years.—*Schenk's Gardener's Text Book.*

HYDROPATRY APPLIED TO SWARMING BEES.—Dr. Robinson, of Farmington, N. Y., informs the Country Gentleman that he succeeded perfectly with a swarm of bees that persisted in collecting in thick masses outside the hive, and doing nothing. He bored a hole through the top, which happened, as he wished, to strike the space between the combs. He then fitted a small hive above the old one, and standing at a respectful distance, with a syringe in his hands, continued to shoot the bees with a delicate broadside of cold water. They soon retired to the interior, and, ascending through the holes, occupied the new hive above.

They immediately went to work to fill it, and in about five weeks it was found to contain some twenty pounds of honey.

Another person had accomplished the same purpose by covering the top with fresh branches of trees, and then imitating a shower of rain by drenching these branches with a watering pot.

This is worth the attention of some of our bee men.

THE Army Worm has made its appearance in this County and is doing serious injury to the corn, potatoes and rice.—*Clinton Ind.*

PRACTICE WHAT YOU KNOW.

ONE great reason that our farmers do not prosper so well as they might is, they do not manage their farms so well as they know how. Whatever may be learned concerning agriculture, we would wish to impress upon the minds of all the farmers the importance of putting what they have learned into practice. One man of respectability, lately told us, as an argument against the use of agricultural papers, that if he farmed it half as well as he knew how, he should do better than he now did. This may be true, yet it is no legitimate argument against the use of agricultural papers; for they not only instruct, but induce people to put in practice what they already know.

As an illustration of the results of negligence, we will give an extract from M. Say, showing how much depends on a latchet, a very insignificant thing of itself, but useful in its place, as is everything else:

"Being in the country, I had an example of one of these small losses which a family is exposed to through negligence. For the want of a latchet of small value, the wicket of a barn-yard leading to the field was often left open. Every one who went through drew the door to; but as there was nothing to fasten the door with, it was always flapping sometimes open and sometimes shut. So the cocks and hens, and the chickens got out and were lost. One day a fine pig got out and run off into the woods; and after the pig ran all the people about the place—the gardener, and the cook, and the dairymaid. The gardener first caught sight of the runaway, and hastened after it, sprained his ankle; in consequence of which the poor man was not able to get out of the house again for a fortnight. The cook found, when she came back from pursuing the pig, that the linen she had left by the fire had fell down and was burning; and the dairymaid having, in his haste, neglected to tie up one of the cows, the cow had kicked a colt which was in the same stable, and broken its leg. The gardener's loss was worth twenty crowns, to say nothing of the pain he suffered. The linen which was burned, and the colt which was spoiled, were worth as much more. Here, then, was caused a loss of forty crowns, as well as much trouble, plague and vexation, for the want of a latch which would not have cost threepence."

M. Say's story is one of the many examples of the truth of the old proverb: "For want of a nail the shoe was lost, for want of a shoe the horse was lost, for want of a horse the man was lost."

From the Country Gentleman.

HOW DO THE NITRATES OF SODA AND POTASH PRODUCE THEIR FERTILIZING EFFECTS?

THE agricultural public has had several opportunities, during the last two or three years, of becoming acquainted with the very remarkable effects which the nitrates above named usually produce upon vegetation generally, and more especially upon the growth of various grass and grain crops. So frequently have the nitrates, and especially the nitrate of soda, been used as fertilizers in the way of top dressings and otherwise, and so uniformly have very notable effects been produced, that it may be considered as a well established fact that the nitrates of soda and potash contribute very materially to the luxuriance of vegetation in several classes of plants, among which grasses and cereals stand pre-eminent.

When a fact of this kind becomes well established, there are always minds whose propensities to investigate and philosophize lead them to endeavor to discover the mode in which the *cause* operates so as to produce the *effects*. Some have this propensity to investigate and discover the manner or steps in the process by which remarkable results are produced, so very strong, that they can give themselves no rest until this *modus operandi*, or mode of operation as it is called, has been satisfactorily determined. This propensity to investigate into causes, modes of operation, and to seek explanations as to the how and the why of important events, has been implanted in our mental constitution for wise and good purposes; and has often led to the discovery of first principles of the utmost importance.

Urged on by this intellectual curiosity, and by the hope of some fortunate discovery of a valuable principle or first truth in agriculture, a French chemist "not unknown to fame," M. Boussingault, has of late been making some experiments on the *modus operandi* of the nitrates of soda and potash, when they act as fertilizers or promoters of a luxuriant vegetation. The results of these experiments M. Boussingault has lately communicated to the Academy of Sciences in Paris, in full detail. This full detail of M. B.'s experiments and results would prove tedious and uninteresting to the bulk of our readers; but a highly abridged summary thereof may prove of interest and value, we trust, to not a few. With such a hope, we have endeavored to condense the more interesting and instructive portions of M. Boussingault's paper

into the few paragraphs which follow. He wished to determine how far their efficacy was owing to the alkalis which formed the base of these salts, all alkalis having some effect upon vegetation, and how far it was owing to the nitric acid with which the alkaline base was in combination.

The only explanation of the useful effects of the nitrates on vegetation of which M. B. had any knowledge before commencing his experiments, was that of M. Kuhlman. That skillful chemist has arrived at the conclusion, that when the nitrates act as fertilizers, their nitrogen, before being absorbed by the plant, is transformed most frequently into ammonia in the soil itself. To obtain the full value of the nitrates, according to this theory, these salts must be placed "under the de-oxidizing influence of a putrid fermentation, of which the definite result will be the carbonate of ammonia." In regard to this theory, M. Boussingault remarks that it is to be regretted that M. Kuhlman has not investigated whether organic matters in the progress of putrefaction do really convert the nitric acid of the nitrates into ammonia. M. B. on this account, thought it proper to examine if the presence of putrefying organic matters in the soil is indispensable for the nitrogen of the nitrates being assimilated by the plant, for if it should appear that assimilation takes place in their absence, we would be at liberty, as M. B. remarks, to draw two conclusions: 1st. That it is not necessary that the nitrogen of the nitric acid be previously converted into ammonia in the soil before becoming fit to be assimilated by the plant; and 2nd. That in their effects on vegetation the nitrates do not act solely as salts by means of the base of potash or of soda.

The process which M. Boussingault adopted consisted in making a plant grow in sand which had been rendered quite sterile by calcination, adding to it a known quantity of an alkaline nitrate and ashes. The watering was done with pure water; and after the plant was fully developed, it was analyzed to ascertain the quantity of nitrate it had absorbed, while the amount of nitrate remaining in the soil was also determined.

In the first experiment, two seeds of the sunflower, weighing together 0.062 grammes,* were deposited on the 10th of May, 1853, in calcined sand, with which had been mixed 0.1 gr. of alkaline ashes, and 1.0 gr. of washed ashes, and successively in the course of the experiment 1.11 gr.

* French gramme is equal to 15.4323 grains Troy.

of the nitrate of potash. The sand was moistened at the commencement with pure water, and after germination with water saturated with carbonic acid. The plant grew in the open air, under a glass roof, which sheltered it from the rain and the dew. On the 19th of August one of the plants had obtained the height of 0.72 metres,† and carried nine fresh leaves and one floral bud, with some faded leaves at the lower part of the stem. The other sunflower was 0.50 metres in height (about 18 inches,) and had six fresh leaves of a beautiful green, and seven faded ones. The two plants after being dried, weighed 6.685 grammes, stem, leaves and roots included. Analysis of the plant and the soil gave the following results:—

	Grames.	
Nitrogen in the plants,	0.1126	
do in the soil,	0.0452	0.1578
Nitrogen in 1.110 gr. of nitre,	0.1536	
do in 0.062 gr. of seed,	0.0019	0.1555
Grain of nitrogen in plant and soil, after four months' vegetation,		0.0023

From the facts connected with this experiment, M. B. draws the following conclusions:—1. The nitrogen of the nitrate absorbed is assimilated by the plant. 2. For every equivalent of nitrogen assimilated, the sunflower receives into its composition one equivalent of potash. 3. We find in the soil nearly the whole of the nitrate which the plant does not absorb. 4. The action of the nitrate of potash, which is most decided from the very commencement of vegetation, manifests itself with the necessary addition of any putrefying organic matter.

In order to judge better of the effects of nitre, M. B. performed another experiment, which consisted in placing on the 10th of May, 1853, two seeds of the sunflower exactly in the conditions in which the seeds of the previous experiment had been placed. The only difference was in withholding the nitrate of potash from the substances added to the calcined sand. The plants in this case grew very slowly, were throughout of a pale green color, and in June, when the other plants were 0.20 metres in height, these were only 0.06 and 0.08 m. The nitrogen obtained by the growth of these two plants in the open air for four months was only 0.0033 gr.

† A metre is equal to 3.287 feet.

Similar experiments were also made with the nitrate of soda, which is the nitrate most in use at present for agricultural purposes. The results were also similar. From both sets of experiments it seems highly probable, that the alkaline nitrates act on vegetation with as much readiness, and perhaps with more energy, than the salts of ammonia. The plants which languished in soil without any addition of a nitrate, flourished vigorously in the same soil when a nitrate was added—as vigorously indeed as they did, in one experiment, in a highly manured garden soil. The decomposition of carbonic acid by the leaves of plants, or the absorption of carbon into their composition, seems, by these experiments, to be in some way dependent on, or subordinate to, the previous absorption of some manure of a nitrogenous kind.

One result of some importance arising from M. B.'s demonstration that the nitrates act favorably on vegetation, by means of their absorption, directly or without the concurrence of substances in a state of decay, is that we are thus furnished with an explanation of the influence, in part, of water used in irrigation. Though some water so used has been found to contain scarcely a trace of ammonia, it contained nitrates; and these contribute like ammonia—and more even than that—to the production of vegetable tissue, or the healthy growth of plants. To this solution of nitrates in some waters, may be owing, in some measure, the fertility of irrigated meadows.

In concluding this much abridged summary of the memoir submitted by M. Boussingault to the Academy of Sciences in Paris, we give his closing paragraph in his own words, thus translated:—“Notwithstanding the power with which a nitrate acts, we cannot accept it as a manure, as it only contains nitrogen and an alkali; but in associating it with the phosphate of lime, we obtain truly a compound possessing the qualities of guano, with more permanence in the nitrogen. In effect on the one hand, guano consists essentially of an intimate mixture of the salts of ammonia and the phosphate of lime, in a state of nearly equal chemical divisions; while, on the other hand, it follows from the foregoing experiments that the alkaline nitrates act on plants in a manner similar to the salts of ammonia. In the country I intend trying, in field cultivation, a mixture of nitrate of soda and phosphate of lime in chemical proportions.—When these experiments are finished, I will communicate the results to the Academy.”

These promised experiments are probably in progress during the present season. The results we shall be pleased to see, and to communicate to our readers.

COUNTRY GIRLS.

METTA VICTORIA FULLER, in the *Ohio Cultivator*, in a sisterly and sensible way, thus talks to country girls:

The farmer's daughters are soon to be the life as well as the pride of the country—a glorious race of women, which no other land can show. I seek not to flatter them: for before they can become this they will have to make earnest effort of one or two kinds. There are some who depreciate their condition, and some who have a false pride in it, because they demand more consideration than they merit. A want of intelligence upon all the subjects of the day, and a refined education, is no more excusable in a country than in a town bred girl, in these days of many books and newspapers.

Many girls are discouraged because they cannot be sent away to boarding schools; but men of superior minds, and knowledge of the world would rather have for wives, women well and properly educated at home. And this education can be had wherever the *desire* is not wanting. A taste for reading does wonders; and an earnest thirst after knowledge is almost certain to attain a sweet draught of the "Pierian Spring." There is a farmer's daughter in this very room in which I am writing, a beautiful, refined and intellectual woman, in whose girlhood, books were not as plenty as now, and who obtained her fine education under difficulties which would have discouraged any but one who had as true a love for study.

I will state why I think the country girls are to become the hope of this country. The women in the towns and cities, are becoming so universally unhealthy and so almost universally extravagant, foolish and fashionable, that men are almost in despair of getting wives who are not invalids, and providing them with what they demand, after they have married them. Unless a young man has the fortune (good or bad,) to be the inheritor of wealth, he must spend the bloom of his youth in acquiring enough to "start upon," as people are expected to begin now-a-days. Men, even in high places, would go to the country for their choice, if they met there equal refinement with intelligence. Women are preparing to take a noble stand in history, and they cannot do it in ignorance.

Town girls have the advantages of more highly polished manners, and greater accomplishments; but country girls have infinitely more to recommend them as rivals of their fair city sisters.—They have more truth, household knowledge and

economy, health, (and consequently beauty,) simplicity, affection, and freshness of thought. When they have cultivated minds, they have more chances in their favor for good sense and real ability, because so much of their time is not demanded by the frivolities of society. The added lustre of foreign accomplishments, could easily be caught by such a mind, from very little contact with the world.

I would not speak as though our farmers' daughters were deficient in education. Many brilliant scholars and talented women may be found among them—in New England this is especially so—but I would seek to awaken the ambition of all to become that admired and favored class which they ought to be, if they but unite refined culture with their other most excellent graces.

A sweet country home, with roses and honeysuckles trained to climb over it, with good taste, intelligence and beauty within, toil enough to insure health, and leisure enough to court acquaintance with books and flowers, and the loveliness of nature; with peace, plenty and love, is surely one of the Paradises which heaven has left for the attainment of man.

OWE NO MAN ANYTHING.

THIS may be bad poetry, but depend on it 'tis excellent sense. It is an old saying that the debtor is a slave to the creditor. If so, half the world enter into voluntary servitude. The universal rage to buy on credit is a serious evil in this country. Many a married man is entirely ruined by it.

Many a man goes into the store for a single article. Looking around, twenty things strike his eye; he has no money, buys on credit. Foolish man! pay-day must come and ten chances to one, like death, it finds you unprepared to meet it.—Tell me, you who have experienced it, did the pleasure of possessing the article bear any proportion to the pain of being called on to pay for it when you had it not in your power?

A few rules well kept will contribute much to your happiness and independence! Never buy what you really do not want. Never buy on credit when you can possibly do without. Take pride in being able to say, I owe no man. Wives are sometimes thoughtless, daughters now and then extravagant. Many a time when neither the wife nor the daughter would willingly give a single pang to the father's bosom, they urge and tease him to get articles, pleasant to be sure to possess, but difficult for him to buy; he purchases on credit, is dunned—sued; many an hour is made wretch-

ed by their folly and imprudence. Old Robert presents his compliments to the ladies, and begs they would have the goodness to read the last eight lines once a week till they got them by heart, and then act as their own excellent dispositions will direct.

Never owe your shoemaker, your tailor, your printer, your blacksmith, or laborer. Besides the bad policy of keeping in debt, it is downright injustice to those whose labors you have received all the benefits of.

How happy the man who owes not a pound,
But lays up his fifty each year that rolls round,
He fears neither constable, sheriff, nor dun;
To Bank or to Justice has never to run.
His cellar well filled and his pantry well stor'd,
He lives far more blest than a prince or a lord.
Then take my advice if a fortune you'd get,
Pay off what you owe, and keep out of debt.

A NEW AFRICAN GRAIN.

A GRAIN called the "fundi," cultivated in some of the districts of the colony of Sierra Leone, has lately been described in *Chambers' Edinburgh Journal*, and brought to the notice of European agriculturists for the first time. It is a slender grass, with digitate spikes, and grows to the height of about eighteen inches. The ear consists of two conjugate spikes, the grain being arranged on the outer edge of either spike, and alternated; the grain is attached by a short peduncle to the husk, from which it is easily separated. The grain, which is heart-shaped, and about the size of mignonette seed, is covered by a thin fawn-colored membrane, and when freed from this membrane is whitish and semi-transparent. It is highly glutinous, and has a delicate flavor, between that of rice and kiln-dried oats.

When ripe it is cut down, tied up in small sheaves, and placed in a dry situation; for, if allowed to remain on the ground and to get wet, the grains become agglutinated to their coverings.—The grain is trodden out with the feet, and is then parched or dried in the sun to allow of the more easy removal of the outer membrane in the process of pounding, which is performed in wooden mortars. It is afterwards winnowed with a kind of cane fan on mats.

The Europeans and negroes connected with the colony generally stew it in a close sauce-pan, with fowl, fish or mutton, a small piece of salt pork being added for the sake of flavor. This is said to

make a very good dish. Sometimes it is made into puddings, and eaten either hot or cold with milk. The grain appears to be quite as delicate as arrow root, while it possesses a more agreeable flavor than sago, potato starch, and other similar preparations.—*Scientific American*.

A SUBTERRANEAN RESERVOIR.—A short time since, while the workmen at the Blue Ridge Tunnel, Va., were digging, a vast stream of water burst forth and flowed out of the tunnel. An eye witness states that the head of the stream was at least ten feet high, and that it swept carts and barrows before it like chaff. The stream gradually subsided, and was low enough at three P. M. to allow us to make a hasty survey of its cause. It seems that there is in the middle of the mountain an immense cavern or pocket, in which water from the melting snow has been deposited for years, and that the line of the tunnel taps this cavern near its centre. The cavern is of immense extent, and will save the State a good deal of money, since nature has opened a road through near three hundred feet of solid rock. This will expedite the completion of the tunnel greatly. Such subterranean reservoirs are the sources of the mountain springs, which supply our creeks and rivers with water during dry weather.

STRAWBERRY LEAVES AS A SUBSTITUTE FOR TEA. M. Kletzinsky, of Vienna, has lately made a report upon the use of the leaves of the wild strawberry (*fragaria vesca*) as a substitute for tea.—When gathered soon after the ripening of the fruit, an infusion of the leaves is a most agreeable dietetic drink. The leaves may be dried in the sun or on heated pans; the infusion from the leaves thus prepared is greenish, slightly astringent, and some, what similar to that obtained from the China plant. The infusion is miscible with milk without coagulation, possesses the same diaphoretic and diuretic properties as tea, and is slightly excitant.—*New Orleans Medical News and Hospital Gazette*.

ONE of the commonest and most foolish things in the world, is to quarrel, no matter with whom, man, woman, or child; or upon what pretence, provocation, or occasion whatever. There is no kind of necessity in it, and no species or degree of benefit to be gained by it. No man ever fails to think less of himself after than he did before one: it degrades him in his own eyes, and in the eyes of others; and, what is worse, blunts his sensibility to disgrace on the one hand, and increases the power of passionate irritability on the other.

RECLAIMING BOGS AND SWAMPS.

The following article on this subject, from the pen of Henry F. French, of New Hampshire, in reply to a correspondent of the *New England Farmer*, contains many excellent suggestions, and will be valuable to those who have swamp lands to reclaim. The rule given for the sides of the open ditches, at 45 degrees, makes these sides too steep—engineers allow a foot and a half horizontal measure for a foot rise, which is as steep as earth will remain without crumbling or sliding down.—An open ditch a foot deep must be therefore three feet wide; one two feet deep, six feet wide, and in like proportion for any other depth. This shows the great waste of land occasioned by open drains, and the economy of underdraining.—EDITORS CO. GENTLEMAN.

I have reclaimed several meadows, and have never yet attacked one that was not worth the experiment.

I have heard of swamps that would not produce good crops, after being well drained, but I never saw, and never expect to see one in New Hampshire. Everybody knows, or may know on slight reflection, that the richest part of the soil on the hills is constantly working into the low places. This process has gone on for thousands of years, and I know of no compensating process which returns again this rich deposit to the hills.

These low places, these swamps, are then the very store-houses of Nature for her treasures of fertility. So theory teaches, and experience verifies the theory. By the same law of gravitation, the water as well as the soil is left in those valleys, and so we usually find them too wet for our cultivated crops. Two things then are to be done, before our upland crops of grass, or grain, or roots, can thrive upon them. The first is

DRAINING.—Examine your ground carefully at the outset, and be sure that you know whence the water comes that makes the land too wet. Does it rain down upon the hills and run into the swamp, and so flood it from want of an outlet? or does some stream back up upon it from below, raised by a dam, which some factory or grist mill has a right to keep up? or does it flow into the land from springs which burst up around the edges, or perhaps in the midst of it, at the bottom? If the water runs in on the open surface, the obvious mode of drying the swamp is to make open ditches that shall cut it off before it reaches the low land, or if this cannot be done, to collect it at the outside, in open ditches, and conduct it off through the lot as speedily as possible. If you have back-

water from a dam to contend with, perhaps your best course is to sell out and move off, for in many local investigations which I have witnessed, I have never been able to see any limit to the effect of back-water.

It not only rises to the height of the dam, but is drawn by capillary attraction, as well as piled up by the retardation of the stream, so that nothing but actual experiment can determine where the effect of the dam ceases. Besides that, the effect of the back-water, which of course produces stagnant water in the ground, is far worse than that of running water. In nine cases out of ten, however, meadows in this part of the country are rendered too wet by spring water, which is rain water falling on higher land and passing down into the earth till it finds a water-bearing stratum, frequently clay or rock, but sometimes compact gravel, upon which it runs until it comes out at the surface or oozes through the soil, rendering it cold and barren. I have at this time a drain in open land which has been mowed eight years, and which I have plowed since haying, to be laid down with grass seed and turnips, which gives a good illustration of the operation of these cold springs. I noticed a wet place after plowing, and had a hole dug with a spade to ascertain the cause. This is a spot on a hill-side, perhaps fifteen feet above the level of the stream which runs along twenty rods below. First came about a foot of dark soil, then two or three inches of white compact sand, then about six inches of red gravel, and under this down to the centre, for aught I know, solid clay. The water filled the hole in an hour or two, to within a foot of the surface of the ground, and this in a dry time. Water cannot pass through clay, but runs on the top of it, in the ground, just as on the surface, only slower, and breaking out thus on the hill-sides, and very often at the edge of a swamp, drowns all vegetation, without showing itself at all on the top of the soil. Usually water flows into a swamp only from one side. The substratum of clay, or other impervious substance, frequently has a dip or inclination much more regular than the visible surface, and carries the water in one direction, as for instance on my farm, from north to south. To intercept and cut off this water, cut a ditch across the course of it, deep enough to cut into the stratum on which the water runs, a few inches, otherwise the water will run under the bottom of the ditch, and come out as before.

For want of stones, I have made use of brush for underdrains, covering it with turf. These answer a good purpose for eight or ten years. I am

now using strips of pine boards, which I happen to have on hand, sawed six inches wide. Two of these I nail together, and lay the edges upon old boards in the bottom of the drain, forming a triangular opening. On this, I place swamp hay, bushes, or tan, and cover up. In wet land I find bushes that were laid eight years ago, quite sound, so that I think pine boards will last many years. This seems a shiftless way of doing the business, but my farm affords no stones, and we have not arrived at the dignity of drain tiles yet, and on the whole we may say of it, as a woman said of her husband who was not a pattern of good morals, "He is no great of a husband, but he is a *dreadful sight better than none.*"

If open drains are used, cut the drains at an angle of forty-five degrees, so that they will not fall in. If underdrains are used, cut them nearly perpendicular, and as narrow as is convenient.

KILLING OUT THE WILD GRASS.—The cheapest, quickest and best method of killing out the bad grasses, is to plow the land. If the mud is very deep, this perhaps cannot be done, but if there is not more than a foot or eighteen inches of mud, land ought to be drained enough, so that the plow can be used. Hauling sand or gravel upon a swamp to form a soil, on top of the wild grass, is an endless task. It requires about one hundred ox-cart loads of earth to cover an acre one inch deep, and it requires several inches to kill swamp grass. After the land is plowed, almost any sand, gravel or soil, is beneficial to a bog meadow, applied to the surface and harrowed in with the grass seed. I should advise to apply manure of some kind.

A compost of guano, at the rate of two hundred pounds to the acre, I think is well adapted to bog meadows, which contain the elements of fertility in themselves, though frequently combined with acids which render them unproductive at their first exposure to the air. The action of frost, after a swamp is drained, and exposed to the atmosphere by planting and hoeing for a season, usually is found to add to their fertility.

No rule can be given as to the distance at which drains should be laid from each other. Frequently a single drain across one or two sides, will cut off all the water from several acres, but if springs burst up at the bottom, drains must be run from them so as to carry off the water. A foot or two of black mud, is as good as a greater depth, so far as I have ascertained, and usually is much more easily cultivated, because cattle may work upon it

however wet it may be, if there is not depth enough of mud to get them mired in.

On the whole, if I were looking for a farm in New England, I should regard a wild swamp of twenty or thirty acres as coming in the way of recommendation, only a little lower than the convenience of common schools and gospel privileges. It is up-hill work farming hereabouts, on a farm entirely upland, and I have found no farming operation more satisfactory; than converting a dismal swamp into a beautiful and productive grass field.

PREVENTIVE AGAINST SMUT.

MESSRS. EDITORS:—As the time is at hand to prepare seed wheat for the prevention of smut in the next year's crop, I send you my method of doing so, which has proved entirely effectual for a series of years, and in various soils.

It is almost universally admitted that brining and liming, if properly done, will have the desired effect; but many farmers reject this method for two reasons; the first, because it is a troublesome operation, and the second, because it endangers the germination of the grain, if sown in dry weather.

My plan is, to slake as much lime as may be necessary, (say about two bushels to every hundred bushels of wheat,) and intermix it thoroughly with the wheat. I suffer it to remain in this state until seed time arrives, when I carry it through the fan so as to prevent a disagreeable effect of the lime to the seedsman, and also to cleanse the seed from cheat, spelt, and other impurities. There are also other advantages to be derived from this plan, besides the little trouble and perfect efficacy against smut, viz: the rats will not destroy a grain, nor will weevil molest it. It can also be sown with greater regularity, and more comfort to the seedsman than the wet wheat can.

I do not claim the credit of this discovery, nor do I know from whom I first learned the fact, but a fact it is, which the experience of others besides myself has fully tested.

It has been said, and may be said by others, that the lime remaining so long in the wheat will impair the germinating property of the grain, so as to prevent its coming up well. Such is not the case. The lime will not injure it at all, if the wheat be dry; and none other should ever be put by for seed. The lime from its caustic nature, will destroy all impure grains, but will not take hold of a sound one. Hence its efficacy against smut. I know very few who pursue my plan, but I have never known it to fail in a single instance.—J. H. BATE, in *Southern Farmer*.

From the Western Eagle.

Just at this niche of time a friend has furnished us with this article on wheat, which we recommend to our readers.

SUGGESTIONS ON SOWING WHEAT.

SOME of our correspondents tell rather pitiful stories respecting the wheat crop in their respective localities, and they speak strongly of its culture being wholly abandoned. But such reports are confined to a very few sections, and these of limited extent. So far as we can learn, the past crop has been comparatively a good one, and farmers are preparing the ground for sowing quite as largely as in past years. This we believe to be good policy.—Wheat is still a safe crop when compared with other staple farm productions. It is so well adapted to universal consumption that it will always find a ready market. No other product of the farm is better adapted for transportation to any part of the world when it may be needed. Few places are so remote from market that wheat cannot generally be converted into cash at all seasons of the year, and no other crop has uniformly maintained so high comparative prices as this. The partial decline during the present year has led many to fear a return to the low prices of former years, but we think this cannot be reasonably looked for. The great increase of gold in our country has changed the old ratios of value, and all kinds of farm produce have felt the influence much more than manufactured goods.—Wheat is now but little higher compared with other crops, than it was five or ten years ago, and we see no reason for its sinking any lower in the comparative scale. Temporary causes may produce a general depression of prices in farm products as well as in everything else, but every consideration leads us to believe that farmers may calculate upon receiving remunerative if not decidedly profitable returns for all the wheat they can raise hereafter. We have annually given a chapter of suggestions at this season, in reference to the time, mode of sowing, &c., of wheat, and we cannot do better at this time than to repeat in substance what we stated last year.

So far as our observation has extended, limestone lands or clay lands limed have generally been found to be the best soils for wheat. The best wheat soils in the "Genesee County," are good loams which are filled with encrinitic limestones, that is, limestones filled with organic or mineral remains. Experience, however, is a better test of the adaptability of the soil and locality to wheat growing, than any arbitrary rules that can be laid down. There are comparatively few farms which do not contain more or less wheat land. There are on almost all farms, many acres which may be sown in wheat with the pros-

pect of only half a crop, to better advantage than to let them lie in stubble or poor pasture. The opinion that all grass land must be plowed previous to harvest, and lie sometime as a summer fallow, is erroneous. A meadow or pasture may be turned over in September, and wheat sown directly upon the inverted sod. Such land should be well harrowed after plowing, and if very poor, a light coating of rotted manure or guano be worked into the surface to supply the necessities of the plant until the decay of the underlying sods. Stubble lands, whether of oats, wheat or barley, may also be sown profitably, if a coating of manure or guano be applied; and it is even better to obtain a half or two-thirds crop, than to let such ground lie idle for a whole year. Those who understand well the philosophy of manuring, find no difficulty in getting remunerative crops of wheat every year from the same field, though a rotation of crops is always advisable where it can be done without contracting the amount of the more important crop.

SELECTION OF SEED.

This should be attended to before as well as after threshing. The wheat ripening earliest should invariably be saved for seed. The manner of threshing is important. When wheat is *crowded* through a machine with close-setting, sharp teeth, a great number of the kernels are broken, or crushed so as to destroy the germ, though the fracture may not be perceptible to the eye, at least without careful inspection. We have counted ten to twenty-five in a hundred kernels thus spoiled for seed. We have latterly recommended to place the whole sheaves upon the barn floor, and beat off with the frail the largest and best kernels for seed; and then lay aside the sheaves to be run through a machine afterwards. Two men will readily beat off thirty to sixty bushels of seed in a day, if the threshing floor is adjacent to the wheat mow, since a very little beating will take out half or more of the grain.

Select the largest, purest kernels for seed.—To pass over the generally established principle that "like produces like," there is an important consideration that we have not seen referred to by writers on the selection of various kinds of seed. Every seed contains not only the germ of the future plant, but also a supply of nourishment for the *first wants* of the young shoot. The germ of the wheat seed is very small, and the great bulk of the kernel is composed of what must nourish the germ until it has sent forth roots into the soil and leaves into the air. If now the kernel be small or shriveled, the young shoot will lack for nourishment, will get a poor start, and for a long time have but a comparatively feeble growth; while, from the full plump kernel, the shoot will derive a full supply of pabulum, will send

forth vigorous roots and leaves, and will have a much better chance for a rapid growth. Three hundred pounds per acre of guano, intimately mingled with the soil, has been found to exert a powerful effect upon the wheat plants, and yet that amount of guano does not furnish to each cubic inch of soil as much nourishment as there is in a single plump kernel of wheat. This reasoning must appear obvious to every one; and to this we may add the fact that, in our experience, as well as from extended observation, we have found the practice of selecting large seed to be highly profitable. Our method has been to run the wheat designed for seed over a coarse screen, which sorted out only about one-fourth to one-half of the largest, plumpest kernels. This process separates all foul seeds, and is the very best plan for loosing out such parts and securing "clean land." We have pursued this course for a few years, and the result has been that the general character of the wheat has been so much improved that after selecting one-third of the plumpest kernels for seed and home use, the remaining two-thirds has still commanded the highest market prices.

Varieties of seed.—Almost every section of the country has some particular variety of wheat which has been found best adapted to the locality, and no general rule can be given. Let every farmer be sure and get the best, and not sow a poorer variety *because he happens to have it*. He can usually exchange with a neighbor, giving wheat good for consumption or market, for that which is more valuable for seed. Better to expend a dollar more for good seed than sow poor, when \$10 to \$12 per acre is to be laid out in other expense of cultivation. An additional yield of two or three bushels for the same labor in cultivating will well repay the difference between good and bad seed.

From nearly all accounts of the past and present year, the Red Mediterranean wheat has been found the most reliable, and wherever this seed is accessible we advise to procure it for a part or the whole of the next crop.

SOW WHEAT EARLY.

Every year's experience and observation show more and more plainly the importance of sowing wheat early. One half or more of the reports from the wheat crop during two years past contain in substance the following: "Early sown wheat is good, but late sown is winter-killed," or "injured by the insect." Wheat should get *well rooted* before frosts set in. The *long* roots will be far less liable to be thrown out by frost. Nature is a good teacher; as soon as the old crop is ripe the seeds fall to the ground and commence growing again. North of latitude 42° it would be better if every grain of seed wheat were in the ground early in September. From

40° to 22°, wheat sowing should be finished by the first week in October.

METHOD OF SOWING WHEAT.

Every person raising twenty or thirty acres of wheat can well afford to purchase a seed drill, unless he can join a neighbor in buying one. Some of the advantages of drilling in wheat, instead of sowing broadcast, may be summed up as follows:

The seed is put into the ground at a uniform depth, the plants come up evenly, grow evenly, and ripen at the same time.

A much smaller quantity of seed is required, because no allowance need be made for portions left partially covered, or covered too deeply; nor for a larger number of seeds falling together, as usually happens in broadcast sowing. Nearly half a bushel of seed per acre may be saved, which, with the present high price of wheat, would pay the cost of a seed sower the first year, upon a large farm or where several small farmers unite in purchasing one.

Where the plants grow at uniform distances the light and air enter more freely, and a more vigorous growth is secured. Direct experiments have shown that where the heads of wheat stand well apart, the kernels upon each head are plumper, and often more than double the number of those upon heads growing closely together.

With the plants at equal distances, the roots occupy the whole soil, and do not interfere with each other, and there is a greater certainty of using up all the fertilizers applied to the ground.

Next to drilling in wheat we recommend plowing it in with shallow furrows. In this method the grain is covered more uniformly with the plow than it would be with a harrow, the plants come up in rows and admit light and air; and as they stand between the small ridges, the soil from those will crumble down with frost, and falling around the roots, will be partially equivalent to hoeing. Of course the ground should not be touched with harrow, roller or brush, after the wheat is plowed in.

MANURES FOR WHEAT.

These must be varied to meet the condition of the soil. Where the ground is cold and wet, and consequently contains decayed vegetable matter, alkalis such as newly slacked lime or unleached ashes, are highly valuable. In soils not abounding already in sulphate of iron in some form, plaster of Paris is an excellent fertilizer, as it—so to speak—catches ammonia from the air and from rain water, and thus supplies wheat with one of its best stimulants. Barnyard manures of all kinds are always good.—We recommend less rotting or composting than is usually practiced. Let the manure, even to long

straw, be kept from fermenting, and get it *under* the surface soil, where it will without fail decay gradually and furnish just the nourishment needed. If this is done there will not be a waste of the greater part of the best elements which are usually lost in the rotting process. Clover plowed under when at its full growth, and while still green, is one of the very best fertilizers for wheat. When clover, manure, or sod is once plowed under, whether before or after the harvest season, it should never be turned up again. Let the surface be thoroughly pulverized with a heavy sharp harrow, or with a cultivator, but never use the plow the second time, at least not deeply enough to throw up to the surface the organic or vegetable substance buried at the first plowing.

Of all "foreign manures" yet tried upon wheat, there has none been found so generally beneficial as genuine Peruvian guano. Wheat seems to delight especially in ammonia, and guano furnishes this in abundance at the cheapest rate. Much value has been claimed for super-phosphate of lime and other manufactured articles, but the benefit derived from these often lies more in the advertisement of the interested manufacturers, than in any observed valuable results. Comparatively good results have indeed, been observed, but it is worthy of remark that these have always followed where guano, or some good substitute for it, has been added to the super-phosphate. The safer, cheaper plan for the purchaser is, to go to the fountain head and get the pure, unadulterated guano itself.

MECHANICAL TREATMENT OF SOIL FOR WHEAT.

First of all, after making it dry, let it be stirred deeply; we do not say plowed deeply in the common acceptance of that word, for it is not always advisable to turn up to the surface a great depth of the subsoil. This may be poisonous, or otherwise unfit for direct contact with the young plant. But it should at least be stirred below with a subsoil plow to let in the air and allow water to drain off. If this is done the roots will strike down to a greater depth; they will derive more nourishment, as well as sap with which to appropriate the food collected from the air by the leaves; the frost will be less likely to heave them out; and the roots thus allowed by the deep cultivation to penetrate deep downwards, will be below the temporary effect of the sun in long drouths or hot weather.

Where underdraining is not already done, wheat soil should in all cases be plowed in narrow lands and the dead furrows between be left deep and well cleaned out, so that no water shall stand in the soil during freezing weather. A single illustration will show the importance of this. Dry or partly dry solid substances like soil, are but comparatively little

expanded and contracted by heat and cold, while water expands and contracts about one-eighth of its whole bulk by a change of nine degrees of temperature, (40° to 31° .) Eight measures of water will produce nine measures of ice, and a soil saturated with water will swell and contract in freezing and thawing just as much as the same bulk of water itself. Now a wet soil by these alternate expansions and contractions, breaks and tears the roots of wheat, and if it is not winter killed outright, it will be so much injured as to have a sickly, late growth in the spring—a result not found where the soil is free from water during winter. All winter crops are in a similar condition. Hence, we repeat, let the best provision possible be made to keep the ground free from water during freezing weather.

From the Country Gentleman.

BONES AS A MANURE.

MESSRS. EDITORS:—So much has been published within the past few years on bones, phosphates and super-phosphates, that it would seem the subject had become threadbare, and that nothing new could be written, and that every farmer was fully apprized of their manurial value. But one need not take a very extensive ramble among our farmers, to ascertain the fact, that but very few of them either save or collect what old bones are readily within their reach, or that might be cheaply purchased in many country towns at the slaughter-houses, tanneries, and soap-boilers; and some, who are aware of their value as manure, neglect them from their indestructible nature, when used in their natural state, and the difficulty of disintegrating or dissolving them, so as to realize any immediate benefit from their application to their crops. The more finely bone manure is comminuted, the more speedy its action; but when only coarsely broken by the sledge, or other heavy hammer, and the land heavily dressed with the broken bones—at the rate of 150 bushels per acre—I have found them a most efficient and durable dressing for the land—in durability exceeding any other material used.

From geological discoveries in different portions of the world, and more recent discoveries in the territory of Nebraska, it would seem that bones are more lasting and indestructible in their nature or composition, when long exposed to the action of moisture, atmospheric or other decomposing agencies, than any other organized structures, whether animal or vegetable.

In the territory of Nebraska there is an extensive district, some thirty miles wide and about ninety in length, in which there is strewn, in the greatest profusion, organic relics of extinct and remarkable races

of animals that once roamed over Nebraska, in by-gone ages, long prior to the existence of the mammoth or mastodon.

But is not the object here to describe the forms, sizes, or peculiarities of these extinct races of animals, differing as they do from any previously discovered fossil remains, or of living species of animals; but rather to say something of the present condition of these bones that have been so long exposed to all the changing seasons for thousands upon thousands of years. And yet these dry bones of *old*, says Dr. Owen, "are still in such a perfect condition, and present so fresh an appearance, that the light is reflected back from the enameled surface of the teeth with as much brilliancy as from highly polished steel. Were it not for their ponderous character, and their strange physiogomy, one might well suppose them to be the bones of recent animals, which had been bleached for a season."

From well established data, geologists say that at the time these extinct animals swarmed in such vast numbers in Nebraska, the configuration of our continent was very different from what it now is. Europe and Asia were then in fact, no continents at all, being only represented by a few islands scattered over a wide expanse of ocean. The Atlantic seaboard of the United States, back to the mountain ranges, and up the valley of the Mississippi as high as Vicksburg, was yet under water. Says Dr. Owen (from the data referred to,) "the geologist is able to prove, as satisfactorily as can be a mathematical problem, that at the time these fossil mammalia of Nebraska lived, the ocean ebbd and flowed over Switzerland, including the present site of the Alps, whose highest summits then only reached above its surface, constituting a small archipelago of a few distant islands in the great expanse of the Tertiary sea."

If the above statements are reliable facts, and doubtless they are, who can enumerate the days and months that have elapsed since these skeletons were clothed in flesh? Estimating the time by years, the numbers would be immeasurably great, utterly beyond the grasp of the human mind—and yet the enamel of the teeth is as perfect as when alive, and most of the bones are in a relatively good state of preservation. A nearly entire skeleton of one was discovered, which measured, as it lay imbedded, 18 feet in length, and 9 feet in height.

The American continent, from Bhering's Straits north, through all the intermediate countries to Southern Patagonia, was once inhabited with huge but now extinct animals, monstrous in size, for the largest of the present races of our animals are but pigmies compared with them. The greater number, if not all these extinct quadrupeds, lived at a late pe-

riod of the "world's history," and long after the unique animals of Nebraska had ceased to be. For since the mammoth and mastodon lived, no very great change in the form of the land can have taken place. And it further appears from the character of the fossil remains in Europe, Asia, Australia, and in North and South America, that those *conditions* which favor the life of the larger quadrupeds, were lately *geologically speaking*, co-extensive with the world.—What those conditions were, no one can tell; though, doubtless, one of them was a much warmer and more equable temperature than we now have.

In North America we know they lived subsequently to the bolder or drift epoch—and yet they might have *lived* and *died* before man was *created*. At any rate, they had ceased to live long before this country was settled by Europeans, as at that time the Indians had no reliable tradition concerning them. Many of the bones of these extinct animals are remarkably fresh in their appearance; yet, however recent they may appear to the eye, these bones have, in fact, lain for more than two hundred years in the situation where they have been found, some on the surface of the ground, others beneath it, and in ponds of water; and if they could remain so slightly changed for that period, we do not see why they may not so have continued for ten, twenty, thirty or more centuries. The bones of the mammoth, as found, are in their natural state—not mineralized.

A few years since, I spent several days in Boston. While I was there, Dr. C. T. Jackson extracted from one of these ancient bones (by pulverizing and boiling,) nearly a wine glass full of glue, apparently as strong and fresh as if it had been extracted from the bone of an ox just slaughtered.

A portion of the soil in an arable district of Sweden, which, from time immemorial, had grown excellent crops of wheat without manure, was found by the chemist, Berzelius, to contain minute fragments of bone, capable upon boiling with water, of yielding a weak solution of gelatine (glue.) It was concluded, therefore, that the spot had been an ancient battle-field, and its prolonged fertility was due to the bones of old time buried in it, and still to some extent undecomposed. As there was no tradition or history of the battle, undoubtedly it was fought long before that of Bannock-Burn, or Flodden Field—perhaps contemporary with that of Thermopylae, and yet the gelatine of the bone undecomposed, although the land has been annually cropped with wheat from time immemorial.

In the *Rural N. Yorker* of Feb. 24, 1855, there is published an article on the 'Lasting Effect of Bones;' the writer says:—

"We know of a field in an adjoining county that has been cropped for thirty years, and is now in a

high state of fertility. The surrounding fields are nothing like it, and with similar cultivation would by this time have been utterly impoverished. The former is the site of an old Indian burying ground, and when the country was first settled, was indented with graves within six feet of each other, all over its surface. The dead, were buried in a sitting posture, not over two feet below the surface, and the writer, when a boy, filled his pockets many a time with beads and arrow-heads, turned up by the desecrating plowshare. The half decayed bones of the aborigines are this day to be seen mingled with the soil, and, sad as it may seem, furnish food to successive crops of grain and grass. If the soil at any time gave signs of impoverishment, the occupant merely ran the plowshare a few inches deeper, and *turned up a few more Indians!* The melancholy truth cannot be gainsayed, that the ashes of a former race of men are to this day enriching many of our fields, and the fact is thereby established, that animal remains, and especially bones, are of lasting benefit as an element of fertility."

Within the past twenty years I have experimented much with bones for manure; but have found much difficulty in reducing them to a fine state, so as to render them more immediately available. Some years ago I boiled a few bushels in a strong lye of sulphate of potash. Two hours boiling would reduce horn-piths to a pulp. Large solid bones required boiling an hour or two longer. In boiling in sulphate of potash, I think there was not so much loss of the ammonia, as it probably was fixed by the sulphuric acid, forming sulphate of ammonia. Afterwards I boiled a quantity of bones in strong caustic lye. This process drove off the ammonia, filling the house from cellar to garret with an odor of ammonia, as powerful as that of the hold of a guano ship. As far as the organic portion of the bones was concerned (in this process) they might about as well have been burned.

Several years ago I burned a cartload of horn-piths and other bones. After being burned they were easily pulverized. A few days before using them, they were mixed with damp unleached ashes. By the process of burning, probably, I suffered a loss of one-half the manurial value of the bones.

A year ago, last spring, I purchased at a tannery, three large cartloads of horn-piths (for which I paid \$5.) About half a cartload of the piths were cut and broken with an axe. They were boiled in water for an hour or two, and then composted—first, a layer of swamp muck, then a layer of "boiling hot bones" and ashes—so on till the heap was completed—being about two cartloads. The boiler would hold about four bushels; each time the bones were taken from the boiler, the hot water was thrown on

to the compost heap. In this situation the mass remained from June till October, when it was carted on to wheat stubble, and applied in about the same quantity as was good manure from under my dung shed. The land was soon plowed. In May last, the land was again manured and plowed, and planted with corn. The portion of the field which received the two loads of compost, is decidedly the best, tho' the whole field is a number one piece of corn. It was, however, much injured some ten days ago, by the wind and rain—the outskirts of a terrific hail-storm that passed just north of my place. Some of the piths, when carted out last fall, were as sound as when on the cattle's head—others were easily crushed in the hand. I presume the boiling dissolved much of the gelatine, and another portion was decomposed in the compost heap, thus forming a good amount of ammonia—both "actual and potential." This was readily soluble, immediately available to the plants—which caused them to throw out from sixteen to twenty suckers from each hill, with leaves and ears to correspond.

Last winter I tried to disintegrate half a cartload of pits in fermenting horse manure, as recommended by Dr. Gibbs. The bones and manure were placed in alternate layers. In the spring, found the piths sound and fresh, and the manure badly firefanged; perhaps if they had been boiled, or soaked in water for a few days previous to placing them in the manure, the experiment would have been more favorable.

In May last I planted a piece of inverted sward land with potatoes—used none other than concentrated manures—two rows with guano—hen dung—an artificially prepared manure from old boots, shoes and scraps of leather—a horn-pith to each hill—tongues and sounds, &c., &c. The rows having a horn-pith to each hill, now, are altogether the best—I mean the tops. The difference can be seen nearly half a mile. If the potatoes turn out in proportion to the tops, horn-piths will prove a most valuable manure for the potatoe crop. I presume the same piths may be used for that purpose for twenty or thirty years, and then be most as good as new. I cannot tell what the "tongues and sounds" would have done, for about the time the potatoes were coming up, all the dogs for two miles round congregated in my potato patch, and dug up every hill, root and branch, where the fish manure was applied.

Some ten years ago, a bone-baiton manufacturer sent me several barrels of bone saw-dust to experiment with. A tablespoonful of the fine dust to the hill, at the time of planting my potatoes, just doubled the crop. A bushel of potatoes, where the bone was applied, could be dug as quickly as half a bushel could be in the rows that had none.

In the spring of 1837, I applied to a piece of land, that the previous year was planted with Swedish turnip, at the rate of 150 bushels of broken bones per acre. They were plowed in deeply, and the land was sown with five pounds of Lucern (French clover.) In the course of three years, the other grasses eradicated the lucern; but the other grasses produced at the rate of three tons of hay per acre for several years. Then the ground was plowed, and sown with wheat and tall meadow oat grass seed, (and by the way, I will here just give it as my humble opinion, that the oat grass is unworthy of cultivation, either for hay or pasture.) I had a fair crop of wheat, and for several years the oat grass stood, when headed out, at least five feet high, and as handsome as a field of grain. But, Mr. Editor, you and I have lived long enough to know that appearances are sometimes deceptive, and this was the case with the oat grass.

In the spring of 1853, I carted on to this oat grass strip of land, and also a strip each side it, at the rate of twenty-five cartloads of green manure, taken from under my dung shed. This was evenly spread, and with a good plow turned under to the depth of six to eight inches, rolled, harrowed, and planted with potatoes—a very good crop, but the boned portion altogether the best.

In the spring of 1854, the ground was prepared for sowing by the use of the cultivator and harrow—sown with oats and clover seed—a very dry season. The oats were good on the boned part of the field; the other portions very light. The first of September, after the oats were off, the whole was alike mowed, and sown with the white flint winter wheat. The land being rather flat and wet, it was thrown into ridges. The result was, that but very little of it was winter killed, and I had a prime crop, especially that upon the boned part; this, at harvest, stood upon an average four and a half feet high, having neither midge, rust, or mildew. It was my intention to have underdrained the land last autumn, but other labors prevented.

On that portion of the field that received the bones seventeen years ago, there was this year a most luxuriant crop of red clover and honeysuckle, while on the strips each side, it was mostly sorrel, with here and there a straggling bunch of clover. The great difference in the crops on the different parts of the land, is unquestionably due to the heavy dressing of broken bone put on seventeen years ago—and seventeen years hence their lasting and beneficial action will doubtless be plainly seen.

From the facts adduced in this paper, I think it must be for the interest of every farmer to collect all the bones within his reach. If they could be ground or made into super-phosphate, they would act more

speedily; but in the absence of bone mills and sulphuric acid, they are richly worth saving. Break them up as fine as you can with an old axe, and apply them to a loamy soil, and you will be manuring your land for yourself, children, and grandchildren, if they are wise enough to keep the old family homestead.

But in addition to an increase of crops, by the use of bone manure, there is another important consideration connected with this subject, viz: the health and thrift of our cattle. For lack of phosphates in the grasses of the pastures and mowing fields of a large portion of the old and long grazed and cultivated farms of New England, our cattle are afflicted with the "bone disease." At some future time I may have something to say upon this subject through the columns of the Country Gentleman.

LEVI BARTLETT.

Warner, N. A., Aug., 20, 1856.

WHEAT IN TWO FEET ROWS.

The following from a circular by Messrs. Hardy & Son, is well worthy of the study of American Farmers, and involves principles not now fully understood. Our wheat drills are so arranged as to require many times the quantity of seed recommended by Messrs. Hardy & Son, and we should be glad to receive information from our practical readers, particularly those who have tried both thick and thin sowing of wheat. If the writers of the following are correct, our present practice is undoubtedly wrong, and the truths connected with this somewhat vexed question may be so readily settled by experiment, that we cannot but hope that our readers will furnish the required information.—[Ed. *Working Farmer*.

Sir:—It gives us great pleasure to observe a paragraph headed "Rotation of Crops," by Mr. J. M. Goodiff, whose views are so coincident with our own. We cannot but think, however, that he ought to have given us some credit for the introduction of planting corn in rows two feet apart, as we claim to be the first who introduced it in a practical point of view. We have several acres this year on the same plan, worked well between with the fork on common stetched land during the winter months, which are progressing favorably from a small quantity of seed. We have also one acre of wheat thus treated, which is sown with lucerne and doing well. Mr. Goodiff is unmistakably on the right scent, and (as he observes,) "let but the work be done well," and success is certain. We have this season about 40 acres on various fields and soils, at less than half the usual number of rows on a stetch, and some less than a quarter the ordinary quantity of seed per

acre, which are progressing favorably. An eminent agriculturist in noticing it observed—"Mr. Hardy, you ought, and you will do doubt, by this process insure every plant to produce some ten or a dozen fine ears, whilst we farmers of the old school from two or three bushels of seed obtain at least but a produce of two weak ears from each grain, or about fifty fold." Our answer was that we very much doubted if they ever obtained even half that amount, viz : 50 bushels per acre from such a proceeding.—We also observed that we should be well satisfied to reap two good ears from each plant of our own half bushel planted, say one hundred fold, or fifty bushels, though we expect more, and surprised him when we reminded him, and he himself became thoughtful, that were it possible to obtain half as much even as this from their two bushels (say no more, though many use it,) it would amount to two hundred bushels produce per acre, which clearly showed the error in sowing thus much seed.

The following is the purport of a contemporary's observation, which are coincident with our own, on this important subject of "thin seeding:"—"The interesting phenomenon of vegetation drawing towards the light has often been exemplified amongst potatoes stored in a dark cellar; a shoot from one of them will often make its way across a floor many feet in breadth, and rise up the door towards the keyhole where a ray of sunshine appears. Roots will also travel long distances in search of food, and having discovered a spot where nourishment for the parent plant is deposited, they will multiply their fibres in hundreds. The attraction which induces this beautiful natural appearance is not fully understood, as the roots have frequently to pass through a comparative barren portion of the soil previous to reaching the desired point. The study of physiology may in the course of time elucidate the mystery; but at present the knowledge of the fact must satisfy agriculturists and horticulturists, and will be sufficient for their guidance and instruction, proving the advantage of deep stirring in order to give full development to the root progress. It does not seem reasonable to suppose that because land is poor, wheat should be sown thickly to ensure a crop. The more sensible course would be to limit the supply of seed to the capability of the land to support its growth at all stages; it being always understood that allowance must be made for casualties, viz :—destruction by birds and insects; but not for careless farming. The wonderful paths of the tender roots through masses of soil, almost impenetrable to the steel fork, excite astonishment, and raise the thoughts of man 'to Him who maketh the grass to grow upon the mountain.' Experiments have shown that the roots of the wheat plants themselves 'tiller out' in an

extraordinary manner under favorable circumstances; these facts are in favor of giving the crop room enough to display its vigorous powers of production. It may therefore be fairly suggested to the farmer to use his discretion in sowing according to the quality of the land he cultivates, always remembering that two heads of wheat or other grain will not come to perfection where the natural soil has only provided for one; and that if he requires to increase the yield, he must bring draining, labor, manure, and intelligence to bear upon the question. Attempts to introduce improvements in agriculture will often meet with strenuous opposition from prejudice strengthened by the habit of following in the jog-trot path of the '*good old times*,' when farmers having a monopoly could afford to let weeds have a fair chance with their crops. The markets have lately been high, but the days are coming which will enable them to compete with the foreigner. It will, therefore, never pay either to smother weeds with wheat, or wheat with weeds

HARDY & SON, SEED GROWERS.

MILLET.

THE following is an extract from the Transactions of the New York Farmers' Club :

The value of millet, particularly for soiling, being under discussion, J. Payne Lowe made the following remarks: Millet, like Buckwheat, is a native of Egypt. The use of this plant for soiling purposes is now being recognized. Horses like it, and when it constitutes a part of their food they thrive well. This fact is also true of oxen. Bread is made from the flour of the seed, and is much used by the Germans and Italians. Poultry like the seed, and practical experience assures us that it is excellent food for them. Deep, loose, and rich soils, are conducive to the growth of millet. The plant being a native of Egypt, we can readily understand why the seed should not be sown too early in spring. Any time from the beginning of May to the first of June will be suitable for the sowing of millet seed. There is much chaffy seed sold in market simply because many persons endeavor to save both hay and seed from the same plants. If grown for hay the usual quantity used by me has been 40 quarts per acre, but if grown for seed not more than half this quantity. If the seeds be sown too thinly for hay the plants will grow too large and coarse, and if too thickly for seed the plants will not grow sufficiently strong to warrant to the seed full development. I have always sown it broadcast, and used the barrow to cover.—As many as four tons of hay may be grown on an acre of land. While the seed is in the milky state, the plants may be cut for fodder. When the upper

seeds are quite ripe is the time to cut, if the object be to raise seed. Four or five days, less or more as the case may be, will be all sufficient for the curing of the hay. The cradle should be used when cutting for seed, but the mowing machine will answer admirably when cutting for hay. Persons should not attempt to save hay and seed from the same plant, for in such case the quality of both will be impaired. It is sometimes difficult to save the seed, (and hence one cause of its present scarcity,) because of the birds coming in countless numbers to feed upon it. Millet leaves the soil in excellent condition for wheat.

NOVEL SEED PLANTER,

By GEORGE A. MEACHAM, of New York City.—This is a seed planting contrivance which is attached to the heel of one's boot, and so arranged that by the act of walking the grain is dropped and planted in the ground. The seed is contained in a belt worn about the waist. A flexible tube conducts the seed down to the planting apparatus.

Farmers may henceforth dispense with their cumbersome planting machinery. To plant their crops they will only need to slip on a pair of these magic boots, and leisurely stalk over the soil.

Horses' feet may be supplied with shoes of the same sort, and the animals become thus converted into four legged, self moving seed planters. Verily, the march of improvement is onward!—*Scientific American*.

HOW TO FEED A ROADSTER IN TRAVELING.

Dr. Azzo, of Louisiana, gives the Country Gentleman his experience with horses upon the road, to this effect:

"I have tried two modes of traveling. I have waited in winter for breakfast, and then rode until night, and have always found myself and horse very much worn down at the end of the day's journey. My usual mode is to start two or three hours after daylight, and travel about five miles an hour until eleven or twelve o'clock, depending in some measure on the distance of the stand or place that I wish to reach. In the winter season we generally rest from one to two hours, and can make our stopping place for the night in good time, averaging forty-five or fifty miles per day. In the summer, I start at daylight, and ride till eleven or twelve, and rest till two or three. My horse is as fresh in the afternoon as in the forenoon, and I can travel from fifty to fifty-five miles a day without much distress to myself or my horse. I give my horse as much food as he will eat during the night, but nothing in the morning in the

way of feed, but always as much good water as he will drink. I have traveled as fast and as far, in the same time, as any other physician in America, and I am well satisfied that the latter mode of traveling is greatly preferable to both horse and rider."

FEEDING COWS DURING WINTER.

MESSRS. EDITORS:—I have a little experience in the above line. About two years ago, I bought a cow that had been wintered in the too common Wisconsin manner—that is, upon straw, with an occasional "angel's visit" of an ear of corn. She gave during ten months, 2,800 quarts of milk.—The next winter she was put upon a diet of good timothy hay, cornstalks, ruta-bagas, and carrots, and the next season of ten months, she gave 5,660 quarts of milk—the pasture being the same both years. The extra feeding during the winter would not exceed \$10 above the straw system. All who have been acquainted with the price of butter during the last twelve months, will know whether I got the \$10 back or not.

J. T.

Wisconsin Farmer.

An experiment conducted by the President of an Ag. Soc. in England, shows that manure which was kept covered by 9 inches in depth with earth, so that no evaporation escaped, produced 4 bushels more of grain per acre, than the same quantity and kind of manure applied to the same extent and quality of land, but which manure had lain from the 13th of January, to the 4th of April, exposed to the weather.—*Rural. New Yorker.*

STATE SHOWS, 1856.

American Pomological Society, at Rochester,	Sept.	24
Canada East, at Three Rivers,	Sept.	16, 17, 18
Canada West, at Kingston,	Sept.	23, 24, 25, 26
Georgia, at Atlanta,	Oct.	20, 21, 22, 23
Illinois, at Alton,	Sept. 30, & Oct. 1,	2, 3
Indiana, at Indianapolis,	Oct. 20, 21, 22, 23,	24, 25
Maine,	Oct. 28, 29, 30, 31	
Michigan, at Detroit,	Sept. 30, & Oct. 1,	2, 3
New Hampshire,	Oct.	8, 9, 10
New Jersey, at Newark,	Sept.	10, 11, 12
New York, at Watertown,	Sept. 30, & Oct. 1,	2, 3
North Carolina, at Raleigh,	Oct.	14, 15, 16, 17
Ohio, at Cleveland,	Sept.	23, 24, 25, 26
Pennsylvania, at Pittsburgh,	Sept.	30
South Carolina, at Columbia,	Nov. 11, 12, 13, 14	
United States Agricultural Society, at Philadelphia,	Oct.	7, 8, 9, 10
Wisconsin, at Milwaukee,	Oct.	8, 9, 10

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., OCTOBER, 1856.

STATE FAIR 14th OCTOBER!

It is almost here; and, reader, once more, do you intend to be there, with *something* to contribute to the show? Thousands have made up their minds and their articles, and ARE READY! *Tres bien!* They are counted upon as sure. But many are yet undecided—doubting, debating, hesitating: And what can be expected of them, at this late period? Why, to decide at once, without further delay, like men and women of spirit and patriotism, in favor of this great State Institution, and proceed to put themselves in readiness to show their faces and their productions at the Fair.

Extraordinary efforts have been made, and strong inducements are held out to make the Fair more than ever attractive and useful. It has heretofore been respectable—highly respectable as a beginning. But many articles have been wanting to render the exhibition a true index to the industrial pursuits of the State; and many things have been exhibited, which were regarded of an ordinary character. How many persons were present at the last Fair who remarked upon these very matters to their neighbors, and said they could themselves have either supplied the deficiency, or beaten the articles exhibited. This they no doubt could have done, and they stood guilty and self-condemned for having neglected so important and obvious a duty. We hope such persons will not forget their convictions and good resolutions on that occasion, and that this fall they will bring out samples of the best of their farm and plantation products, the best work of their shops, the most beautiful specimens of the loom, the needle or the brush, and the whole family, great and small, old and young.

The Fair, henceforth, is to be the great event of the circling year, and the centre of attraction to all that is beautiful and excellent in art and nature, and all the industrious and animated masses of human beings striving for improvement and happiness, in all the linked counties of the State on every side, even to its outmost limits. It will be unfashionable, unpolite, unpatriotic, vulgar, and stu-

pid, not to attend and be familiar with the proceedings of the Fair. The young must be trained in it—the old must brighten the pathway of their declining years by the lights which it sheds over the varied pursuits of life.

Last year we earnestly exhorted all to stir up their cousins of every degree and get them out to the Fair. A great many complied only in part.—They sent their cousins, but didn't come themselves. In this way, many of the more advanced in life, especially, came up among the absent. This was wrong. Mother and father, as well as daughter and son, and even grandmother and grandfather ought to come and see the improvements for themselves. It would lengthen their days and add happiness to their declining years. They must rub up their spectacles and come out this fall, and feast their own eyes. From the mountains we may expect minerals rivaling the mines of California; furs and skins equalling the North-West; Irish potatoes perfected in their native climate and soil; Buckwheat unrivalled; hay that no country can excel; all the grains in full perfection; fruits never excelled since Eden was deserted; pure sweet butter, such as Goshen might boast, well worked and packed solid in oak firkins, and warranted to keep a year; cheese to melt in the mouth; and honey as sweet and white as Caanan ever saw in the days of promise; and cattle, hogs, sheep and horses, needing only a little more attention in raising to be equal to any in the world. And from the East and Middle country, there will be numerous superior specimens of the noblest products ever produced by the earth. And in addition, there will be Washing-machines, threshing machines, reaping and mowing machines, new-fashioned churns, cream freezers, refrigerators, self-sealing cans, sausage cutters and stuffers, plows, hoes, harrows, rakes, flowers, fruits and specimens of art and industry, in every department, such as the old folks never saw or dreamed of in their day. Let them come up, then, in the words of the Homestead, "to this mount of vision, and survey the goodliness which their children and childrens' children now have in possession."

A fuller exhibition is expected this fall than heretofore. It is intended that the State Fair shall be on a much grander scale than that of last year, and no State shall beat North Carolina—if we can prevent it!

HAIL STORM AND EARLY FROST.—We were visited by a destructive hail storm on Sunday the 20th of Sept., and on the Tuesday and Wednesday following considerable frost in places.

WE return our grateful acknowledgments to the Granville County Agricultural Society for the honor, (politely made known to us by A. C. Harris, Esq.,) of an election to honorary membership of that Society, and an invitation to attend the Fair, at Henderson, on the 8th, 9th and 10th Oct. It will afford us much pleasure to be there, and, Providence permitting, we intend to enjoy that satisfaction. The Hon. A. W. VENABLE will deliver the Annual Address, and every effort will be made by the intelligent and liberal managers to render the occasion both instructive and pleasing to all who may attend.

We also tender our thanks to the Ex. Committee of the New York State Agricultural Society for their polite and cordial invitation to attend the New York State Fair.

WE take the liberty of extracting the following from the private letter of our esteemed friend Dr. S. G. Ward, of Warren, as encouraging evidence of the estimation in which our humble efforts to advance the improvement of our native State, are held by those of whose good opinions we may well be proud.

"Success to the Arator; its general diffusion throughout the State, I think, would impart vigor, and create an important era in our farming. Its pages are replete with that kind of local, and practical information—so long a desideratum to the farmers of North Carolina. Is it possible that they will be so blind to their interest as not to appreciate it; but let it expire, as they did the "North Carolina Farmer," in the beginning of its usefulness, I fear! The length of your late receipts are ominous of a falling off of its friends."

For the Arator.

MR. EDITOR: In the September number of the Arator, some enquiries from B. A. W. attracted my attention, and having some experience in the two first, or first and second, I can answer in the affirmative. I have been experimenting with woods mud, more or less, for twenty years, and I think it is time I knew something about it; and after trying different ways, I find the best is to carry out as much as is necessary for an acre—it depending on the strength of the mud used—drop it in loads at equal distance, spread and plow in immediately.

As to the second, it is actually essential that stable or lot manure should never be used until it has been composted with clay impregnated with lime or mud that has but a small quantity of gravel

in it; by so doing, you raise two loads of manure where you would have but one, and much better, as your corn, cotton or wheat will not fire.

The 3d will richly pay if your lime and ashes do not cost too much.

5th. It depends on the soil. I have seriously injured light land by turning it over in the fall.

6th. Will greatly improve the crop of wheat if sowed at the time of plowing. J. J.

Kinston, N. C., Sept. 12, 1856.

For the Arator.

MR. LEMAY: Will you be so kind as to insert in your much esteemed paper, the following receipt for the cure of Bone Felons, as I am often applied to for receipts and the remedy. And having cured so many, I give the receipt with the full assurance that it will cure all if applied in the first stages. The person that gave it to me assured me it would cure the Kings Evil, but I have never tried it for that disease:

Take one grasp or handful of garden Rue,

" One " " of Green Tobacco,

" One " " of Life Everlasting,

" One " " of Wormwood,

" One " " of Cammomile,

Bruise and put them in something to stew; add half pint of lard, half pint of hog's feet oil, and about as much water, and simmer over a slow fire for two hours, or until the water is all out: strain and bottle. For dressing, roast an egg very hard done, take the yolk of the egg and a piece of alum pulverized very fine, as large as the end of the little finger, and with the alum and egg add enough of the ointment to make a salve—steam and wash the sore with tea of life everlasting, made very strong, then spread some of the ointment on the sore, and apply the salve; dress twice a day. Yours, &c., J. J.

Kinston, Sept. 12, 1856.

For the Arator.

EDGEcombe, N. C., Sept. 15, 1856.

MR. EDITOR—Dear Sir: A few years ago, I had to be sending about the neighborhood buying chickens and eggs, and I got tired of it and resolved to do better. I increased my hens, and commenced raising. Last year, I sold 800 dozen eggs and some chickens. This year, I have sold, from 1st day of January to 1st day of September, 1023 dozen eggs and some chickens, besides having an abundance of chickens and eggs for my

own use. If you think this worth a place in your paper, you can put it there; and if any of your readers wish to know my plan of raising them, I will give it to you. B. ANN JENKINS.

[We can answer for our readers: hundreds of them will be glad to know your successful plan of raising chickens, and we, therefore, hope you will furnish it, for their benefit, in time for our next number.]—Ed.

PROFITS OF AGRICULTURE.

WE continue sundry estimates of crops, raised in various sections of the country. It should be understood that we give these, generally, not as possible under high cultivation for a single season, but as actual crops, and without any special effort. As such, the results attained should shame thousands of farmers who continue "poor"—raising but a fraction of these values from the same quantity of land. The first below is a statement of the farm products of a farm in Mendon, N. Y. The sum total gives a profit of 21 per cent. on the capital invested.

The field is nine and a half acres in extent.—It contains thirteen apple trees.
The expenses were:

Manuring,	\$50 00
Six days' plowing,	12 00
Harrowing,	3 00
Marking,	2 00
Ten days' planting,	10 00
Twelve days' cultivating,	18 00
Ten days' hoeing,	10 00
Seed corn,	2 00
Seed potatoes,	2 00
Digging potatoes,	3 00
Picking apples,	3 00
Cutting up corn,	8 00
Husking corn,	32 00
Repairs on fence,	8 00
Plaster,	3 00
Interest on land,	66 50
Total,	\$232 50

The products were:

1,050 bushels of corn, at 28 cts. per bushel,	\$294 00
105 bushels of potatoes,	32 00
180 bushels of apples,	20 00
4 bushels of turnips,	1 00

23 loads of stalks,	69 00
10 loads of pumpkins,	10 00
2½ bushels of beans,	4 00
8 bushels of black walnuts,	2 00
1 bushel of walnuts,	1 00

Total,	433 00
	232 50
	200 50

The prizes awarded by the Agricultural Societies in the State of Connecticut were, for crops raised per acre, as follows:

A. Hart, Cornwall,	936 bush. carrots per acre
A. Wadhams, Goshen,	1344 " " "
A. Beecher, Bethlehem,	1416 " " "
T. S. Gold, Cornwall,	1184 " ruta бага "
J. T. Andrew, West Cornwall,	1600 " " "
J. T. Andrew, West Cornwall,	2102 " Ing turnips "
C. Post, Hebron,	106 " sh'd corn "
J. L. Phelps, West Cornwall,	105 " " "

RYE.

The following are some of the results of the most successful culture of this crop that we have noticed.

In Pamela, Jefferson Co., N. Y., upon a clay loam 2 12-100 acres of land produced 94 bushels of rye. It had been well manured with stable manure, and a hundred bushels of lime per acre. It was plowed in the fall of 1853, sowed in the spring with spring wheat, plowed in August, and sowed with rye in September, two bushels to the acre, without manure. It was harvested 15th of July, 1854.

The income was:

94 bushels, at one dollar per bushel,	\$94 00
Straw sold for,	22 00
Total,	\$116 00

The expense was as follows:

Seed,	\$4 00
Plowing, sowing, cultivating and harrowing,	5 50
Cutting, binding, drawing, thrashing and clearing,	13 50

	28 00
Profits,	68 00
	\$116 00

This gives a profit of \$88.

In Hillsdale, Columbia Co., N. Y., rye was sown upon 3 acres 3 roods and 20 rods, in a soil which was a dark loam with some gravel. In the spring of 1851 it had been planted with corn, twenty-five loads of manure being applied before plowing.— In the spring of 1852 it was sown with oats, and in September, 1852, it was sown with one and a half bushels of rye to the acre, and no manure after the corn crop. The rye was harvested the second week in July, 1853. The yield was 163-2-50 bushels of rye, which was sold at one dollar and ten cents per bushel.

The income was :

Sale of rye,	\$179 33
700 bundles of straw,	21 00
Total,	\$200 33
The expenses were :	
Plowing, harrowing and seed,	\$11 80
Harvesting, thrashing and carting,	27 00
Interest on land at \$80 per acre,	21 70
Total,	60 50
Profits,	139 83
	\$200 33

In Rockland, N. Y., four and three-hundredth acres of land, which had been cultivated with corn and oats, without manure, except an application of lime to the hills of corn, the oat stubble being plowed under, and twenty loads of manure being spread over about $3\frac{1}{2}$ acres, were sown with $4\frac{1}{2}$ bushels of rye, the first week in September.

The income was :

91 bushels of rye at \$1 per bushel,	\$91 00
Estimate of straw,	20 00
	\$111 00

The expense of the crop was :

Two plowings, harrowing, rolling, drawing manure, and sowing,	\$12 75
Seed at \$1,	4 75
Total,	17 50
Interest and profit,	93 50
	\$111 00

In Hadley, Hampshire Co., Mass., in the valley of the Connecticut, a crop of corn of fifty bushels per acre was gathered in 1853, after 12 loads of manure per acre had been applied. The land was then plowed from eight to nine inches deep,

and sown with white rye, one and a half bushel to the acre. Middle of July, sixty-five and a half bushels of rye were harvested, and the straw weighed three and a quarter tons. The expenses of cultivation were \$16 25; interest and taxes, \$15; giving cost of crop, \$31 25.

Also in Hadley, Hampshire Co., Mass., three acres and twenty-seven rods of land, which had for two years been planted with Indian corn, was sown with rye. Three bushels of seed were used. About twelve loads of manure to the acre were applied with the cultivation of the corn. The account of the rye crop was set down as follows :

88 bushels and 20 quarts of rye,	\$1 25
per bushel,	\$110 75
4 tons of straw,	24 00
Total,	\$134 75
The expenses were :	
Plowing, cultivating, harvesting, etc.,	\$24 50
Interest at \$190 per acre,	36 00
Taxes,	3 50
Total,	\$64 00
Profits,	70 75
	\$134 75

In S. Danvers, Essex Co., Mass., on the farm occupied by the town's poor, consisting of a shallow, gravelly soil, seven and three-quarter acres were sown with rye. The practice was to plow sward land in the fall, plowing in the manure.— Four loads of manure were used per acre. In the spring the land was cross-plowed eight inches deep, well harrowed, planted with corn, potatoes, beans, etc., with about a teaspoonful of plaster in a hill. The next spring, three cords of manure per acre were plowed in deep, and planted with vegetables, plaster being used as before. In October, 1854, the rye was sown, eight bushels of seed being used. The grain was cut late in July, and $229\frac{1}{2}$ bushels of rye, weighing 56 lbs. each, were sold at \$1 50 per bushel. Of the eleven tons of straw, eight were sold at an average of \$16.

The income was :

229½ bushels rye, at \$1 50 per bush.	\$344 25
11 tons of straw, at \$16,	176 00
Total,	\$520 25

This crop was charged with one-third the manure of the two preceding crops, and the account stated was :

One-third manure of previous crops,	\$112 00
Plowing, etc.,	30 00
8 bushels of seed,	10 00
Harvesting,	25 00
Threshing,	48 00

Total,	\$225 50
Profits,	294 75

Plow, Loom and Anvil

CORN CROP IN TENNESSEE.

THE protracted drought in many parts of this and adjoining States, has seriously injured the corn crop; and it is estimated that in some localities, and especially in East Tennessee, half a crop will not be made. In Middle Tennessee, the yield will be somewhat greater, and in West Tennessee it is thought a light crop will also be made. In view of this expected scarcity, it becomes necessary for farmers to use diligent means to avoid the consequences of a short crop, by carefully preserving everything that will make food for stock. The following extract from the "American Presbyterian," published at Greenville, shows the severity of the drought in East Tennessee, and also gives some good suggestions for avoiding its evils:—

"While passing to and from the meeting alluded to, we paid some attention to the appearance of the corn crop, which all taken together presented the most gloomy prospect we ever saw in this country. From this place until we reached the Jefferson county line, we saw but few fields of corn that promised anything of consequence.—After we entered Jefferson, the crops appeared much more promising. While down there, there were fine falls of rain showers, which altered the appearance of the crops considerably, and we could not but notice the very decided change which the rains had made upon the crops all the way up; for there seemed to have fallen a general rain, which is making quite a change in the appearance of the crops; but with all we are bound to have a very light crop of corn, perhaps the most so we have ever had in this country. In view of the present failure in prospect for corn, we will make a suggestion to farmers which we think they would do well to heed. It is simply this: Let every farmer prepare his land and sow as much in turnips as possible, which should be done about the fall of the moon in this month. Turnips are an excellent food for cattle; with plenty of them cattle will do well. As the oat crop is pretty fair, and the hay crop fine, all are pretty well provided with

means of wintering their horses; and if they will take warning in time, and sow a bountiful crop of turnips for their cattle, the winter may be passed without experiencing any considerable inconvenience. There is a fine crop of wheat made, and a considerable amount of old corn in the country; there is plenty of breadstuff in the country. Then let every farmer sow a good quantity of turnip seed, which, if they do well will make a supply of food for our cattle, and it is probable that the new corn crop will be sufficient to fatten our hogs, with something left for bread. Let our farmers begin in time to look ahead and make provision for the coming winter. It is sometimes useful to people to be threatened with hard times, as it often teaches us most valuable lessons of economy, which we might never otherwise learn. If any of our readers think our suggestions worth anything, they are welcome to the benefit of it, free of any charge."

SALT AND GUANO.

RECENT experiments, stated in the Mark Lane Express, go to show that common salt is a valuable addition to all applications of guano to the soil. It not only has a tendency to give strength and hardness to the straw, (which guano weakens,) but prevents the loss of ammonia, which is constantly going on even in a dry atmosphere. Mr. Barral, the editor of a French agricultural journal, says: "We left in open air, in plates, during fifteen days, equal weights of the pure guano, and guano previously mixed with salt. At the end of that time we examined anew the amount of nitrogen, and found that the pure guano had lost 11.6 per cent. of nitrogen, while that mixed with salt had lost only five per cent." The Express recommends the use of refuse salt from fish-packers for this purpose, and any refuse salt would probably answer the purpose.

SUCCESS prompts to exertion, and habit facilitates success. Habit also gives promptness, and the soul of dispatch is decision. One may write a book or paint a picture, while another is deliberating about a plant or a title-page. The more we do, the more we can do. If we go forward with spirit and confidence, we shall succeed. The best are idle half the time, and he who does nothing renders himself incapable of doing any thing while capacity is invigorated by occasions of necessity. Our expenditure of intellectual wealth makes us rich, and we acquire ideas by imparting them.

CLOVER PASTURAGE—HOVEN.

For milch cows clover constitutes one of the best pastures. Care must be used in turning them on it in the spring, otherwise they are liable to be hoven—that is, from fermentation of the clover in the first stomach, they become so distended with gas as to endanger their lives, if not speedily relieved. To guard against this, they must not be turned on the clover till the dew is entirely dried off; and if the pasture is good, they should not be allowed to remain on more than an hour at a time.

If any cattle should become hoven, they may be promptly relieved by the following simple process:

As soon as you discover the affection, which you will know by their swollen appearance and uneasy movements, make a stout rope, well twisted, about as thick as your wrist, turn the cow into her stall, and putting the rope into her mouth, tie it over the top of her head behind her horns; secure it well and turn her loose. In her endeavors to get rid of the rope, she will so turn up her head as to allow the escape of the gas, and in fifteen minutes she will be relieved.

Some five or six years ago, we found six of our cows thus affected at the same time. Having somewhere read of the above remedy, we tried it, with immediate success; the cattle were so much affected, that they must have died if not relieved. We have seen it tried several times since, and always with success.—*Louisville Journal*.

Last week a fine Devon heifer was taken with hoven. She was caught, and a couple of slices of fat salt pork put down her throat. She was well in a short time. This has always proved a sure remedy with us.—*Prairie Farmer*.

BREEDING ANIMALS.

We believe, says the *Prairie Farmer*, that it will be allowed, in order to obtain a large growth on animals of any kind, next to giving them a full supply of nutritious food, they should not be allowed to breed until they have attained full growth and maturity. It is true that nature, being careful of the reproduction of animals, oftentimes brings the reproductive organs into action early, and if continued in action it is generally at the expense of the size which would have been obtained, had the above named organs been suffered to remain dormant for a longer period. It is also a fact, we believe, that the smaller animals are more prolific, and commence breeding at a comparatively earlier period of their lives, than

the larger ones. Whether there is any analogy in this and the diminution of size by early breeding in the same animal, we cannot say.

The *American Veterinary Journal*, edited by Dr. Dadd, of Boston, has the following remarks in regard to this subject: "Victor Gilbert never allowed ewes to have lambs until they had passed their third year; and the bucks were not used until they had arrived at full maturity. He, as well as many other sagacious stock raisers that we might name, are probably conversant with the fact, that during the period of growth and development, up to maturity, the reproductive organs are dormant, while at the same time the nutritive function was wholly engaged in elaborating chyle and blood, for the development of bone, muscle and nerve, and that by calling into requisition the reproductive or generative organs, before the animal had attained full growth, must necessarily divert the elements of matter intended for nutrition from their legitimate channel, and direct them to the reproductive organs. This is precisely what takes place. A too early use of the purely animal function, induces weakness and stunted growth."

FATTENING SHEEP.

The following is a summary of an article of fifty pages, in the *Transactions of the Royal Society*, on experiments in fattening sheep:

"CONSUMPTION OF FOOD.—Sheep of different breeds consume quantities of food in proportion to their respective weights when at an equal age, stage of feeding, etc.; that is to say, three sheep weighing one hundred pounds each, will consume the same quantity of food as two sheep of one hundred and fifty pounds each.

"Sheep on good fattening food—such as cake or corn, with chaff and roots—will consume weekly about four and three-quarter pounds of cake, four and three-quarter pounds of hay, and about seventy pounds of roots, for every hundred pounds of their live weight.

"When fed as above, they will consume every one-seventh of their own weight of the dry substance of food; that is, after deducting the moisture it contains.

"RATES OF INCREASE.—Sheep well fed and under cover, will increase about two per cent. per week, upon their weight; that is to say, one hundred pounds live weight, will increase from one and three-quarters to two pounds per week.

"To increase one hundred pounds in live weight, sheep will consume about two and a half hundred weight of cake or corn, two and a half hundred weight of hay chaff, and one and a half to one and three-quarter tons of roots."

PAYMENTS FOR THE ARATOR SINCE SEPTEMBER NUMBER.

Price, Needham, Eagle Rock,	\$1 00
Turner, W. D., Wake, (thro' Mr. C.),	1 00
Huggins, Owen,	2 00
Cntchin, Josiah, Tarboro', (paid some time ago)	1 00
Jones, Seth, Rolesville,	1 00
Ledbetter, Thos. B., Little's Mills,	1 00
Jackson, Jesse, Kinston, (some time since re- mitted,)	1 00
Ellis, Isaac, Farmington,	1 00
Ward, Dr. S. G., Henderson,	3 00
Pullen, J. & S., Raleigh,	1 50
Evans, H. L., Raleigh,	1 50
Mallet, Wm. T., Fayetteville,	1 00
Muir, William, Brinkleyville,	1 00

INDEX TO OCT. NO. 1856.

Army Worm,	586
A New African Grain,	590
Agriculture—profits of,	603
Breeding Animals,	606
Bees and their Management,	584
Benzole for Insects,	580
Bees swarming, Hydropathy applied to,	586
Bones as a manure,	595
Clover Pasturage—Hoven,	606
Cabbages for feeding,	580
Cotton Plow and Scraper,	583
Country Girls,	589
Communications, (J. J.),	602
Communication, (B. A. J.),	602
Corn Crops in Tennessee,	605
Extract from Letter of Dr. S. G. Ward,	602
Fattening Sheep,	606
Feeding Cows in Winter,	600
Fish; China Artificial Breeding,	581
Garden Seed, for saving,	585
Hogs, Pork and Bacon,	577
Hill-Side Ditching,	582
Hail-storm and Frost,	601
Kicking Cows,	583
Manure, experiment in covering,	600
Manure Heaps,	581
Millet,	591
Nitrates of Soda and Potash, how their effects are produced,	587
Owe no man anything,	589
Progressive Planters,	581
Pavements and Health,	584
Pears, Dutchess D'Angouleme,	584
Plowing, Improve,	585
Practice what you know,	586
Quarreling, no necessity for,	590
Reclaiming Bogs and Swamps,	591
Roadster, how to feed in traveling,	600
Subterranean Reservoir,	590
Strawberry Leaves a substitute for Tea,	590
Smut, preventive,	592
Seed Planter, novel,	600
State Shows,	600
State Fair 14th Oct.,	601
Salt and Guano,	605
Wheat, suggestions about sowing,	593
Wheat in two feet rows,	598

THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.

THE Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

THE SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*. Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

WYCHE'S CULTIVATING PLOW.

PATENTED 26TH FEBRUARY, 1856. (The Bladed Plow,) awarded \$20 premium at the last N. C. State Fair; with cutting blades in the place of a moldboard; cuts, divides and turns over the soil; depositing the finer parts in the furrow, and turning over the turf, clods, &c., on the surface. Is cheap, light, and lasting, and easy to both driver and team. Admirably adapted to almost any purpose for which the plow is used.

For license to sell, with farther information, address
W. E. WYCHE.

Brookville, Granville Co., N. C.

J. H. Gooch, Oxford, N. C., solicits orders for the above plows.

June 16, 1856.

4-11f.

FARMER'S HALL, RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the Mole Plow; with vertical cutters near the edge of a horizontal share, for dividing the furrow slice, and a curved cutter on the rear of the share for turning the whole in towards the plow, or as far on the opposite side of the share as may be desired. Adapted to siding, listing, breaking turfy or hard land, subsoiling, and many other purposes. Is light, cheap and strong; and supposed to be the most perfect pulverizer in use.

For license to sell, with directions for manufacturing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-46f.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds.

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring.

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-4f.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop known as JENKINS' OLD STAND, would announce to the people of North Carolina generally, that he is prepared to manufacture in a beautiful and durable manner, Coaches, Buggies, Rockaways and vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c., of every description, and as my facilities for repairing are good, the public may rely upon having their work done at the *lowest possible rates*, and in a manner *unsurpassed* by any other establishment in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-4f

W. L. POMEROY,
REPRESENTATIVE.

BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dispatch at this office.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

Wm. J. McDowell

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, NOVEMBER, 1856.

NO. VIII.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

FOR THE ARATOR.

SAND FOR STIFF CLAY LANDS.

MY DEAR SIR: I have been long endeavoring to improve land, and have learned something from experience, which I am willing to communicate to beginners. I have found that light sandy soil, taken from the woods and spread upon stiff clay land and plowed in, in the Fall, then cross-plowed in the Spring before planting, makes it more productive and easier to work, for a longer period of years, than the application of any other substance—proving that it—the sandy soil—should enter largely into the ingredients which we put upon our clay lands, when looking to permanent improvement. It changes the nature of the soil, and makes it not only easier to plow, but more reliable for all sorts of seasons. Farmers of Orange, Alamance, Chatham, and other

counties, where red, stiff lands are abundant, might profit by making liberal trials according to these suggestions. I should be glad to hear from others who have made experiments; and also, as to the effects of turning under green crops. I desire to know what kinds of green crops are best to turn under for the improvement of our red lands; and also the time and manner of doing it. Will not some of your readers give us information on this subject?

I am, one of your constant readers.

P. F.

Oct. 3, 1856.

For the Arator.

CLAY FOR SANDY LAND.

MR. EDITOR: I have often heard the question asked, What is the best manure for coarse sandy land? I can answer, from experience, *Clay*. When putrescent manures are given to such land, they should always be composted, first, with at least five times as much pure clay. For a permanent improver, it is better by itself, than any vegetable or animal manure alone. There is much sandy soil in this county and State that might be made very valuable by a

practical use, on the part of its possessors, of this knowledge.

So much for the fact. Now for the *why or wherefore*. Every intelligent or reflecting farmer, lives and learns by looking into the causes of things. It is a source of pleasure as well as profit. The reason, in this case, is so clearly and satisfactorily explained by the following extract from the American Agriculturist that I am glad to be able to substitute it for my own reflections on the subject. After adverting to the fact, that a large portion of the sustenance of plants comes from the air, through the medium of the leaves, the Editor says:

"If we take a piece of rotten wood, rub it to a fine powder and throw it into the air it immediately becomes invisible. A mass of vegetable, either burned or rotted, disappears into the atmosphere, from their altered chemical condition or from their minute division. These fine particles are collected by the leaves again and enter into the composition of growing substances.

"The food thus collected by leaves is carried by the circulating *sap* down to the different parts of the plants, and deposited where it is needed in the process of growth. The sap, on the contrary, is gathered from the soil through open mouths (spongioles) upon the extremities of fine rootlets, and ascends through the inner wood, or central portions of the plant stalk; thence circulates through the leaves, gathering in its course the food collected by them, and it then descends thro' the outer wood, or external portions of the stalk, depositing the food where it is needed to increase the bulk of the plant."

"The amount of food collected by the leaves depends upon the extent of leaf-surface, and upon the continual change of air, so that fresh supplies of food may be furnished as fast as one portion of the air is exhausted. On this account it is probable that plants grow faster during gentle winds, than when the air is calm and comparatively motionless. But it matters not how large

may be the leaf-surface, nor how great may be the supply of food furnished by the air, the plant will not grow rapidly *if there is not an abundant supply of sap* to carry this food to the points where it is needed. Much of the sap that ascends is evaporated from the surface of the leaves, and in dry weather it often happens that nearly all the moisture collected by the roots is thus lost, and as a consequence, the plant languishes, or is literally starved to death.

"This view of the subject reaches an important practical lesson—viz: that careful attention should be given to furnishing an abundance of sap by a well-developed system of roots. These roots should go down into the soil far enough to be beyond the reach of the sun's drying effect. To accomplish this soil must be stirred deeply to admit the air. In most soils freely-circulating air is necessary to destroy or change poisonous substances. But of this we do not propose here to speak. We will now only refer to the

*"Mechanical Structure of the Soil, as relates to its fineness and coarseness.—*The sap absorbing roots of all plants are exceedingly small—so small that they cannot be seen by the unaided eye. When we pull up a stalk of corn, for instance, we only draw up the larger, stronger roots. There is left behind by any single stalk, millions of tender rootlets, which can only be found by long continued and careful washing of a portion of the soil, and the use of a magnifying glass."

"The practical point we are aiming at is, that these sap-absorbing roots are so very small, that they can not grow in any situation where there is not a sufficiency of very fine, impalpable soil, to afford a medium for their growth.—Small roots, large enough to be visible to the eye, cannot grow in a medium composed wholly of gravel stones.—But fine sand grains are much larger compared with sap-absorbing rootlets, than are gravel stones the size of chestnuts compared with roots no larger than a cambric needle."

"The adaptability of a soil to the growth of these fine rootlets, and, in a great measure, its fertility, depends upon the amount of impalpable material—that is, earthy substances so fine that when rubbed between the fingers there is no perception of roughness. We know that common clay is such a substance as this. It feels smooth, or salvy, so to speak when rubbed in the hand.

"It is on this account that we often find clay one of the very best fertilizers that can be added to a sandy soil. The particles of sand making up such a soil are too coarse to furnish a medium of growth to the sap absorbing rootlets.—The addition of the fine clay particles supplies the want."

"To test any soil in reference to this point, take a portion and put it into a vessel; add four or five times its bulk of water; stir well; let it stand two or three minutes; then pour off the water into a clean tin or glass vessel, and let it stand perfectly still for a few hours, or till it becomes quite clear. If there does not settle to the bottom of the water poured off a considerable portion of fine impalpable earthly material, equal in weight to from one-twentieth to one-tenth of the original soil, we may safely conclude that it does not contain enough of fine soil to support the sap-absorbing rootlets of any plant. Manures added to such a soil may stimulate the growth of greater length of root, and lead them to a greater distance in search of moisture; but the most feasible means of improvement is, to bring about a change in the mechanical structure. Frequent stirring and exposure to the air and frost, which disintegrate the coarser particles and furnish more of the fine material, are beneficial; but we believe the most rapid and in the end the most economical improvement of such soils, is to add to them a liberal supply of fine clay."

"We venture the opinion, that on any sandy soil, or even on sandy loam, a few loads of fine clay thoroughly mingled with it will, in the course of a few

years, produce more marked effects than half as many loads of the best organic manure. When clay is so added, it remains a permanent improvement, unless the soil is subjected to running water that will wash out the clay again."

"The amount of clay that may be profitably added to any soil, will depend upon its present necessity or physical condition. On many soils ten loads of clay per acre, will show a marked effect, while on most very sandy fields, one hundred loads per acre will be found a most profitable outlay. We earnestly advise those who have light, coarse, or sandy fields, with clay accessible, to ponder this subject well, and to try a portion, at least, with a good admixture of CLAY."

Your readers need have no fear of losing time and labor in hauling clay upon their sandy lands. It will always pay.

As to how it should be applied, I would say, when put on alone, it should be hauled and spread in the latter part of Summer and in the Fall, and allowed to lie so on the surface until early Spring, when it should be turned under, and the land finely harrowed after plowing, mixing it thoroughly with the soil. When composted with manures, the sooner mixed with the soil the better.

These are my views: if they accord with others, or if any person has more correct knowledge or experience, I hope in both cases they will make it know in the Arator.

R. H. HARDFIST.

Wake County, Oct. 8, 1856.

REPORT ON WHEAT-GROWING.

TO THE LOCUST BOTTOM AGRICULTURAL CLUB, (BOTETOURT.)

The committee appointed to investigate the subject of Wheat-growing, reported to the club the following views:

Wheat is said to be a native of Tartary and also "the Island of Sicily, where it grew spontaneously or without

cultivation." The peculiarities of climate and the composition of the soils to which this important cereal is indigenous, would constitute a subject of interesting inquiry. The former, indeed, would be of practical advantage only so far as points of resemblance might be found to exist in our own climate, which we can neither change nor modify: but correct information in respect to the latter—the constitution of such soils,—would serve as an important auxiliary in prosecuting investigation respecting the necessary conditions of its healthful development and successful cultivation in this region. In the absence of such specific information, we are compelled to resort to that of a secondary character, and to depend mainly upon the uncertain light of experience, derived from observation of facts, illustrated or obscured as the case may be, by the greater or less attention given to particular circumstances attendant upon them.—It is not surprising then, that diverse and conflicting opinions should prevail, when deduced from data so variable and uncertain, nor that the *system* of cultivation best adapted to secure to the Wheat-grower the largest production and the greatest profit, should still be enveloped in doubt and obscurity. It has been matter of common experience and general observation, that wheat does not require in the soil, so high a degree of fertility for its production as corn and tobacco; nevertheless, it must possess a peculiar adaptation of quality to its successful growth. The elementary constituents of the plant, especially the inorganic or mineral portions, must be present in the soil, or the absence of those ingredients of which it is deficient by natural constitution, or of which it has been deprived by exhaustion, must be artificially supplied. And here, we may felicitate ourselves that, although we are ignorant of the proportion of each as they happily combine in the constitution of soils adapted to the spontaneous production of wheat, yet, we are not left wholly dependent on individual experience and observation, but derive

important additional instruction from the light which the advancing science of chemistry is beginning to shed on the subject. By analysis we learn what are the elementary constituents of a good wheat soil, what amount of organic matter it contains, and in what proportion the different earths on which wheat is dependent for its supply of inorganic material are to be found. By a like process we learn what are the ingredients of which wheat is composed, and that a necessary condition of its favorable development is, that lime, soda, potash, clay, sand and phosphate of lime should mingle in proper proportions in the soil. We also learn by the concurrent testimony of science and experience in support of the same principles, that the condition of the soil should be such in regard to consistence, friability and temperature as by cultivation to render it most favorable to the absorption and retention of ammonia, and to its proper permeation by moisture and by solar and atmospheric influences.

Wheat has often been assailed by so many enemies, as to threaten at times its extinction among us. But by a wise ordination of Providence, it has been retained amidst every discouragement, and still constitutes one of the principal means of employment, through which man by "the sweat of his brow" is destined to earn bread. Long continued use has rendered this valuable cereal no less indispensable than agreeable as a *bread stuff*, otherwise it might have fallen a sacrifice to the parasite and innumerable other enemies which infest it, and the various other obstacles to its successful cultivation.

Corn and tobacco, being natural to our climate, seldom have to contend with disease; wheat, which is an exotic, would no doubt be comparatively exempt, if we could bring about artificially, what is essential to its natural development and spontaneous growth;—the nearer we may approximate that natural condition for wheat, the more complete will be our success. We may fre-

quently take warning that all is not present in the composition of the soil, which is necessary, by the appearance of disease, or what we have been accustomed to regard as disease, but which in truth may be a want of condition to complete its growth.

Deep and thorough preparation favours the production of wheat. It has been ascertained that the roots will seek nourishment at the astonishing depth of four feet, and clay must be reached by the roots, in order to get the necessary supply of soda and potash. It is assumed that under favorable circumstances, a large growth of clover turned under, will insure a satisfactory crop of wheat; peas may be equally advantageous, both having many of the properties necessary to complete in our soil and climate a condition for wheat. Guano, having almost, if not all the properties essential to its production, (when applied in sufficient quantities, under favourable circumstances,) warrants the expectation of a satisfactory crop.

The time of preparation is of much consequence. It should be much in advance of sowing. The time of sowing too, is of still more consequence, if too early, it is apt to favour the development of its never-ceasing enemy the fly, —if too late, your crop is thrown into the season for rust. Experience favours an early preparation, say from the 15th till 1st of September, and the sowing from the 15th September, till 15th October, as promising of success.

MADISON GILMORE.

WM. E. WALKUP.

RICH'D. G. HADEN.

This report was received, and after being modified, as to the time of sowing wheat, by recommending that late wheat, should be sown from the 1st to the 30th of September, and early wheat from the 15th September till 15th October, the secretary was directed to tender the report to the Editor of the Southern Planter for publication, as a contribution from the club to the cause of agriculture.

RICH'D G. HADEN, *Secretary*.

The following memoranda, taken from various sources and furnished by a friend, form an appropriate addendum to the above report.

ANALYSIS OF WHEAT.

Sprengel analyzed 100,000 parts of dry wheat, and obtained the following inorganic constituents:

<i>Substances in the</i>	<i>Grain.</i>	<i>Straw</i>
Potash,	225	20
Soda,	240	29
Lime,	96	240
Magnesia,	690	32
Alumina,	26	90
Silica,	400	2870
Sulphuric Acid,	50	37
Phosphoric Acid,	40	170
Chlorine,	10	30
	1717	3518

The organic portion of wheat consists of *Album, Gluten, Starch*, more than half *Gum Dextrine, Sugar, &c.*

THE TIME OF CUTTING WHEAT

Affects the weight of produce, as well as the quantity of organic matter, and the relative productions of Flour and Bran. According to Johnston,

Wh't cut.	Days before ripe.	Y'd of gr'n.
" "	20	160 pounds
" "	10	220 "
" "	fully ripe	yielded 209 "

The yield of Flour and Bran were in the same proportion in favor of that cut 10 days before ripe.

THE BEST WHEAT LANDS:

Are those which contain a good proportion of clay, with lime and potash.

Boussingault estimates "rich wheat land" to contain,

Clay	75 per cent.
Lime	4 "
Humus	11 "

As a *scouring* crop, wheat must be placed at the head of the list. According to *Boussingault*, a medium crop takes from one acre of land, in grain and straw, of

Phosphoric Acid,	17 pounds.
Sulphuric do,	2 "
Chlorine,	1 "
Lime,	16 "
Magnesia,	13 "
Potash and Soda,	24 "
Silica,	121 "

all in the Straw, and 2 lbs. Oxides of Iron and Alumina.

Wheat requires a dry soil more than any other crop, except Barley. Wheat never known to "winter kill" and seldom to "rust" on a dry soil.

THE WASTE OF SEED.

Is very great in our common broadcast mode of sowing. Stephens made this calculation, viz:

"Wheat at 63 lbs. to the bushel, gives 87 seeds to a drahm."

From various calculations of the *yield to an acre*, it would appear from Stephens' estimate above, that in the best crops, there is a loss of 33 percent of the seed, and in ordinary one (40 bushels!!) [in England] 58 per cent.—Seed wheat to be prepared by extracting all the small grains. Ground not to be too rough. Wheat not to be covered up more than two inches.

DEEP PLOWING.

MR. ARATOR: There are many, one of whom I am which, who go it strong, agin any of yer new-fangled notions in agricultur; and there aint nothing we oppose more certainly than your inscriminit and killin system of deep plowin—killin to land and teems. So you needn't put nothing more about that in the koppy you send to me; for I have come to the inclosurement not to spend no more of my time in reading sich. I take the paper for the good receipts, it puts out; and to gather all I can about gwanny that people is usin about, and the way they are making sich a thumpin chance of manure, and makin the old fields fetch the corn and cotton like new ground; and because I like the way you talk about edicating our children, takin care of our stock

and imperments, savin all we can, and makin something of ourselves and improvin the old State. A wishin you good luck, I remain your friend and feller-citizen tell death.

JACK HOE.

Our friend Hoe will, we are sure, excuse us for putting one more piece in favor of deep plowing in his copy of the Arator, and he will, we trust, do us the favor to read it; and should he be tempted to practice deep plowing hereafter, we advise him to do it cautiously. It will not do to turn up much of the sub-soil at a time: half an inch at a plowing is as much as can be thrown up without injury. Turning half an inch deeper at every subsequent breaking of the land, will after a while, make a deep soil like that of a garden, which Mr. Hoe must confess is desirable.—But there are some lands that have such poor, gravelly sub-soils, that it would be "killing" to turn them up, or to break even far below the top soil. In plowing such lands, much care and judgment must be used. The bed may be deepened, but it will not do to drive the plow in as it will in soils embedded on good clay foundations. We saw some land in Texas very rich on the top, resting on nothing but pebbles reaching down to great depth. The breaking of such land even to the pebbles would be wrong, as they drain off the water too rapidly, and the admixture of such materials with the top soil would be obviously injurious. With these suggestions, by way of caution, we copy for the special benefit of Mr. Hoe, *et id genus omne*, the following article from the Southern Cultivator.—If they are not a lazy race, who love the house and shade, they will profit by it.

"Volumes have been written to prove the advantages of deep ploughing and thorough draining, and volumes will yet be written again and again to urge and recommend them; for they are the cardinal principles in all good tillage;

and their value is too apt to be overlooked. They require time and labor to perform properly, and unless their value is truly estimated they are too often neglected in the hurry of preparation, and the anxiety to cultivate more extensively.

"Let us condense in a few lines, some of the advantages of deep plowing; by which is meant not only the thorough pulverising of the upper soil to a considerable depth, but also the loosening of the subsoil; for, within reasonable limits, there is no doubt that the deeper the plowing the more effectual it is.

"1st. It lets in air to the roots.—The roots, and more especially the small rootlets and spongelets at their ends, need a certain amount of atmospheric air to perform their functions in a healthy manner. When the soil is shallow and hardly pulverised they are forced to the surface and are thus too much exposed to the vicissitudes of the weather. In deeper soils they have a wider range of pasturage and are not so much exposed to the alternations of hot and cold—wet and dry.

"2d. It permits a freer access of air to the soil. There is a constant disintegration going on in the soil; a breaking down and pulverizing of the parts which have been turned up from below, when the soil is made of rocky matter decomposing *in situ*. By this means fresh materials of value are added and new elements introduced. To hasten and carry on this process the oxygen of the air is necessary, and the more freely it is supplied the more rapidly it goes on. A good supply of air is also necessary to carry on the fermentation and decomposition of any compost manures which may have been applied.

"3d. It allows the freer passage of the small rootlets, which permeate the soil and ramify in every direction, more than through hard compact ground.

"4th. It permits of an easy passage to rain water, which in a wet season, would collect on the surface, and stagnate. Nothing is more injurious to

vegetation than stagnant water, whether lying on the surface or in water soaked soil. It arrests ventilation of the land, clogs the roots and stem with deleterious matter, scalds the tender roots under the burning mid-day sun, and chills them at night from excessive evaporation.

"On the other hand, by the free passage of rain water downwards, the roots are supplied with carbonic acid and ammonia, two gases highly important to vegetation.

"5th. In time of drouth it affords a passage upwards of the moisture from below, and thus furnishes a supply when it is most needed. This moisture which comes from below holds in solution more or less of soluble earthy matter which is needful to the plant; and that part of which is not used water holding it in solution rises to the surface and evaporates.

"Thus, in one word, deep plowing gives air to the roots and to the soil, allows, a freer passage to the young roots, lets off superfluous water from above when there is excess and permits the rise of moisture from below when there is deficiency; and if any further argument is needed, let any one look around him this dry season and note how the deeply plowed and the shallow crops have fared, and then, pencil in hand, make the calculation how much he might have saved by incurring the additional labor and expense of deep plowing. R."

South Carolina, Sept. 1856.

TOBACCO.

ITS CULTURE AND MANAGEMENT.

Read before, and published by order of the Liberty Neck Agricultural Club of Amelia County.

"Multum adhuc restat operis, multum que resiat, nec ulli nato, post mille sæcula præcluditur occasio aliquid adjiciendi."

The success of growing a crop of Tobacco, depending much upon early planting, the selection of such situations for

plant-beds as will ensure a proper exposure to the sun, is all important. The eastern or southern slopes of hills, near their base, afford the best locations, the beds so situated being freer from sobbing, and the warmth of the sun greater than upon flat surfaces. Regard should also be had to the character of soil, it should be sufficiently close to render it retentive of moisture, and yet contain sand enough to give it quickness: made earths, and other puffy soils are unfit, being both too arid and liable to heave. Having selected the bed, care should be taken to burn it; neither too wet, too dry, nor too hard, for if too wet it will bake, and if too dry the mould will be consumed. The latter objection also obtains to burning too hard. It is only necessary to burn sufficiently to destroy the vitality of the seed and grass roots upon the land.

The bed having been burned, the ashes should be swept off and the ground hoed up, observing to invert the soil as little as possible. The roots removed, and after raking guano to the rate of 500 or 600 lbs. to the acre applied, hoed in, the bed again raked and the seed sown, an ordinary pipe bowlful to every 20 yards by 4 feet; tread and cover thinly with brush. The ashes should be clearly removed, otherwise the action which will ensue between the lime, with which they are impregnated and the guano, will expel its ammonia.

To protect the plants from the depredations of the fly, sow air-slacked lime over the patch, and repeat the application if necessary. Upon removing the brush, which should be done towards the latter part of April, or early in May, the grass should be picked from the beds, and well rotted stable manure, which has been divested of its causticity, by having been spread and exposed to the air applied.

The land having been deeply broken should be well manured, re plowed and reduced to a fine tilth for dragging.

Lay off the rows six feet six inches apart, which when divided will give

three feet three inches to each row, ridge with a double turning plow, and make the hills three feet three inches distant. The distance at which the tobacco is planted is of some consequence for if too far apart, the loss in a crop will be considerable, while its value will be impaired by its coarseness, and if too thick, it will ripen irregularly, its lower leaves being too much excluded from the air and sun to mature them.

Here allow me to digress, that I may speak of Peruvian Guano, when used alone as a manure for the tobacco crop.

From its earliest history, Virginia tobacco has ranked pre-eminently high in the markets of the world, as well as for its richness as delicacy of texture; now it stands but little better, if indeed as well as western. Why is this? Surely it cannot be attributed either to a change in our climate or soil. Is it not rather to be ascribed to the fact, that instead of growing it upon our Virginia soils, and improved lots, which from vegetable decomposition abound in those elements, which enter into the composition of the plant, large quantities are being raised upon soils from which those elements have been abstracted, solely with the aid of the fertilizer?

The rationale of guano growing large, poor, coarse tobacco, I conceive to be of easy solution. Such is the stimulus given the plants by this magic manure, that the absorbent vessels of its roots become so enlarged, as to take up and carry to it a much larger quantity of sap than is natural; its sap vessels become engorged and distended to such a degree, that even the capillary vessels which are distributed over the surface of the leaf, are enlarged; and while these vessels have to eliminate through the pores of the leaf a great deal of sap, but little is assimilated in consequence of the absence of those elements, which enter into the constitution of the plant, in the manure employed. Such tobacco must necessarily lose vastly in curing while the sweating to which it is sub-

jected during the evaporation of its sap, will give it a reddish color, with a rough and porous face.

The question might arise, whether or not guano should be dispensed with as a manure for the tobacco crop. I should say not. For by combining with it the Columbian or other kinds of guano, rich in the phosphates, its defects may be in a great measure supplied, and although it can never be made to produce an article as desirable as that grown upon new lands and improved lots—yet, with the increasing demand for this staple, and the impossibility of raising a sufficiency of putrescent manure to apply to the entire crop, its use should be continued.

But to return: Hills enough for a planting being made, (the plants being large enough to bear transplanting,) cut them off and plant in the evening, there generally being sufficient season in them to take root. A common error prevails of planting when the ground is too wet, especially upon stiff soils, as then the sticks with which the holes for the reception of the plants are made, compact the earth, and when dry a crust is formed almost impervious to their roots. Tobacco thus planted is also liable to perish from the jar received at the first working.

CULTIVATION.

So soon as the tobacco has taken root sufficiently, and grown off, it should be ridged out, the row should be loosened with the cultivator, and the hills scraped off to remove the grass. The next working should be given as soon as the plants begin to spread the hill, a foot coulter should be run sufficiently near the tobacco to check its growth, and a hill put to it. This close ploughing is especially necessary, if the tobacco shall have grown off rapidly, otherwise it will probably be of narrow leaf. It is even now necessary to attend to the worming. The last ploughing should be given just as the most forward plants are coming in to top, the earth should be thrown to the tobacco, with a turning plough, and a good hill made, observing so to divide

the step as to allow the water to pass off freely. Scraping up, when required, completes the cultivation; in this operation, all loose earth should be drawn to the hill, and the row scraped down to a hard surface to permit the water to pass-off quickly. Firing may, (I am satisfied,) be guarded against to a considerable extent, by being careful never to disturb the roots of the tobacco after it comes into top, and by keeping the spaces between the hills divided, and the row scraped up, to prevent sobbing. Plants, as well as animals, have their peculiar idiosyncrasy; for while some may be improved by continuing working and excessive moisture, certain it is, that either corn or tobacco, are liable to fire, if their roots are disturbed about their period of fructification; nor is it to be wondered at since at this stage of their existence, when the greatest amount of support is required, the supply is cut off by severing their lateral roots, or by their decay.

The tobacco should be primed to about six inches. In topping, the most forward plants should be to twelve, the next to ten, and towards the middle of August to eight leaves, after which time fewer leaves should be left. The tobacco should be wormed and the suckers pulled off at least once a week, and should never be cut until entirely ripe, unless forced to do so from disease.—The tobacco being cut and secured from sun-burning, should as soon as fallen be removed to the house, and not more than eight or ten plants put upon each stick, and the sties placed at least ten inches apart upon the tier poles. It should then be left until it has yellowed, when small fires made of dry old field pine, clear of lightwood, should be applied; the heat for the first two or three days should not exceed 100 degrees, about the third or fourth day it should be increased to 115 or 120 degrees, and kept up until the leaf becomes pretty dry. The fires should then be allowed to burn down, and when the leaf comes in order they are again applied, and kept up with increased heat until both

leaf and stem are cured. House burning is frequently the result of allowing the stem to absorb from the leaf, when it is imperfectly cured. No further use of fires is necessary to dry it out, the only precaution required being to keep the floors of the barns covered with straw, to prevent the moisture from the ground affecting the tobacco upon the lower tiers. In stripping, the most experienced hands should assort the tobacco into first and second quality of lugs, and long and short leaf. The leaf should be neatly tied in bundles of six or eight leaves, taking care to keep each bundle as nearly as possible of the same length, and color. The lugs of both qualities should be prized and stripped, and the leaf carefully straightened, packed down and wrighted, but never allowed to remain longer than two or three weeks in bulk, otherwise it may have a rank smell imparted to it.

In hanging up, use small sticks about two and a half feet long, and sharpened at one end, to allow them to pass through the tobacco without opening it; press the tobacco pretty closely together to exclude air as much as possible, leaving a part of the house vacant to allow room for opening, when you wish to prepare for ordering it.—In sticking, (the tobacco having been thoroughly dried out,) take it down, upon a warm south wind, so soon as it has come sufficiently to bear being moved without breaking, place it in a bulk upon the sticks and allow it to remain until it has softened somewhat from laying, then take it from the sticks, and after straightening, pack it down carefully in bulk for prizing, cover closely to exclude air, and weight heavily.

When about to prize, an experienced hand should be put at the bulk, assorting both short and long into two sorts, according to color and quality, for separate hogsheads. Of this operation of prizing, it is unnecessary for me to speak further than to remark, that fine tobacco should be packed, rather than prized, and that lugs and inferior leaf

should be prized sufficiently hard to make hogsheads of good weight.

RICHARD F. TAYLOR.

[REPORTED FOR THE STANDARD.]

NORTH-CAROLINA STATE AGRICULTURAL SOCIETY.

Proceedings of the North-Carolina State Agricultural Society, at a called meeting and at the regular Annual Meeting, held in Commons Hall, in the City of Raleigh, on the 13th, 14th, 15th, 16th, and 17th, October, 1856.

MONDAY, Oct. 13th, 7½ P. M.

A called meeting of the Society took place this evening, the President, Hon. Thos. Ruffin, in the Chair.

On motion, Jno. C Partridge, Esq., was appointed Secretary pro. tem.

The President stated the object of the meeting to be to facilitate the arranging of the lists of judges for awarding premiums. The list of those appointed by the Executive Committee was then called, and the absentees were requested to report themselves to-morrow morning at the Fair Grounds,

On motion, the meeting then adjourned.

TUESDAY, Oct. 14, 7½ P. M.

The regular meeting of the Society took place this evening, the President in the Chair.

On motion Jno. C Partridge, Esq., was appointed Secretary pro. tem.

The President announced that the records of the meetings of the Executive Committee had been regularly kept, and that the Secretary would read them if desired. The reading was dispensed with, and the records laid on the table for examination.

The meeting was now ably addressed by Prof. Emmons, State Geologist, on the importance of improving the stock of the State, the advantages of soiling, in producing manures, and increasing the products of the dairy.

The meeting was also addressed by Maj. C L Hinton, of Wake, Edmund Ruffin, of Va. Robt. R Bridgers, Esq, of Edgecomb, and T P Devereux, Esq, of Halifax, on the subject of composting, and on the necessity of rotation or alternation of crops, and on the great benefit to be derived from the pea crop.

The list of judges to award premiums, was read.

On motion of R H Smith, a committee, consisted of R H Smith, of Halifax, Maj. C L Hinton, of Wake, and Dr. W R Holt, of Davidson, was appointed to take into consideration the expediency of changing the time of holding the Annual Fair, and to report to the meeting to-morrow evening.

J W Norwood, Esq, of Orang, gave notice that he would introduce a resolution, to-morrow evening, on the subject of horizontal ploughing and hill-side ditching. Adjourned.

WEDNESDAY, Oct. 15, 7½ P. M.

The committee appointed for that purpose at last night's meeting, reported in favor of changing the time for holding the Annual State Fair from the second to the third Tuesday in October. But the time for holding the Fair having been fixed by the constitution of the Society, it would require a

constitutional vote to alter it; and there being no copy of the constitution present, the report was laid on the table.

On motion of R H Smith, Edmund Ruffin, Esq, of Hanover county, Va. was elected an honorary member of the Society.

On motion, the Society proceeded to the election of officers for the ensuing year, and the following were unanimously elected:

Hon. Thos. Ruffin, of Alamance, President.

Jno. S Dancy, Esq, Edgecombe, 1st Vice President.

R H Smith, Esq, Halifax, 2nd do

W R Holt, Esq, Davidson, 3rd do

Hon. W A Graham, Orange, 4th do

J F Hutchins, Esq, Wake, Treasurer.

Jno. C Partridge, Esq, Secretary.

The report of the committee recommending a change of time for holding the Annual Fair, was now taken up, and, after considerable debate was adopted—yeas 31, nays 25.

J W Norwood, of Orange, offered the following resolutions, notice of which had previously been given:

1. **RESOLVED**, by the North Carolina Agricultural Society, that the Executive Committee prepare a tract, in which plain, practical instruction, shall be given upon the method of horizontal ploughing and hill-side ditching.

2. **RESOLVED**, That the committee lay that tract, together with a suitable memorial to be drawn up by them, before the Legislature at their next meeting at as early a day of the session as possible, in which they shall pray the Legislature to grant them an appropriation in money sufficient to enable them to publish the tract, and place a copy of it in the hands of every owner of land in the State of North Carolina.

R H Smith, of Halifax, offered the following as a substitute, which was adopted:

Resolved, That the Executive Committee of this Society offer, in their next list of premiums, a sum not less than fifty dollars, for the best Essay on the methods of horizontal ploughing and hill-side ditching.

The meeting then adjourned.

Thursday, Oct. 16, 7½ P. M.

The President announced the following committees for the ensuing year, viz:

EXECUTIVE COMMITTEE—Jno. S Dancy, of Edgecombe, R H Smith, Halifax; Maj. C L Hinton, Wake; Robt. A Hamilton, Wake. W H Jones, Wake; Paul C Cameron, Orange; W R Poole, Wake.

COMMITTEE TO INVITE SPEAKER TO DELIVER THE ANNUAL ADDRESS AT THE NEXT FAIR—Dr. E A Crudup, of Franklin; R A Hamilton, Wake; W R Holt, Davidson.

The following was offered by J S Dancy, and adopted:

WHEREAS, It has been ascertained, from experience that the Executive Committee, as now constituted, is too small for effective purposes, particularly during the week of the Fair, be it resolved that the constitution be so altered that the President be required to increase said Committee from

seven to ten, and that five of them be a quorum for the transaction of business.

In accordance with this resolution, Wilson W Whitaker, Wake; W A Eaton, Warren; and W R Holt, Davidson, were added.

T P Devereux offered the following, which was also adopted:

Resolved, That the constitution be amended as follows; That any person who will contribute the sum of twenty dollars shall be a member of this Society for life, and that the fund constituted by such subscriptions be invested by the Treasurer under the direction of the Executive Committee as a permanent fund, the annual interest whereof shall be applicable to the payment of premiums, and the other ordinary expenses of the Society.

C L Hinton and D W Courts were appointed to audit the Treasurer's accounts.

Two vols. of Essays on Calcareous Manures and Agriculture, were received from the author, Edmund Ruffin, Esq, of Va.

T P Devereux offered the following, which was adopted after considerable debate:

RESOLVED, That hereafter the legislative powers of the Society be committed to the Executive Committee—the said committee reporting all their acts to the first general meeting of the Society, and such proceedings shall stand as laws of the same unless then otherwise ordered: **PROVIDED NEVERTHELESS**, That nothing in this resolution contained shall be so construed as to deprive the Society of the power of originating legislation.

Jno. S Dancy, presented the following—adopted.

RESOLVED, That the thanks of this Society are due and are hereby tendered to the Wilmington and Weldon Railroad, the North Carolina Railroad, the Raleigh and Gaston Railroad, the Seaboard and Roanoke Railroad, and the Roanoke Valley Railroad, for the facilities afforded in transporting stock and implements on their several roads free.

The President announced the following gentlemen as marshals and Assistants for the next Fair:

MARSHAL—Gen. Jos B Littlejohn, of Franklin, Marshal.

ASSISTANT MARSHALS—Col. E P Jones, of Caswell; Col. G W Watson, Johnston; Simon G Hayes, Esq. Granville; Albert Hinton, Esq. Wake; Dr. S A Williams, Granville; H A Dowd, Esq. Wake.

Meeting adjourned.

Friday, Oct. 17, 7½ P. M.

Hon. Kenneth Rayner offered the following resolution, which was adopted:

RESOLVED, The thanks of the State Agricultural Society are due and are hereby tendered to Professor E Mitchell, for the very able and instructive address this day delivered by him; and that five hundred copies of the said address be printed and distributed under the direction of the Executive Committee—one copy to be sent to each member of the State Agricultural Society.

Agreeably to an invitation from the Executive Committee, the Society was ably addressed for about an hour and a half, by Edmund Ruffin, Esq. We give below a meagre synopsis of his address.

Mr. Ruffin, after touching upon the great impor-

tance of all matters tending to the general advancement of practical agriculture, spoke of the high degree to which it may be raised in North Carolina and, the ample means at her disposal to that end. He then went on to allude to some of the obstacles to her advancement. The low, flat grounds of the State were averse to agriculture—for the most part they were worthless. Some of them, if properly drained, might be reclaimed with great profit. A second quality of land, he said, had a deficiency of lime, which must be supplied to render it useful. He then pointed out the availability of lime and marl, for every purpose required. A third obstacle, which he designated an evil, produced by man himself, and which could and must be removed if progress is to stamp our career, is our system of overtaxing the land, and our almost total disregard of the proper rotation of crops. He would not say what crops should follow each other; but the pea crop, which is peculiarly adapted to our State, was perhaps the greatest improving crop that could be used.

Having taken a general view of these obstacles and the remedies, where such can be applied, Mr. Ruffin proceeded to remark in detail upon some of them. He first took up the question of drainage as applied to swamp lands, which he divided under two heads—low lands and low firm lands. These low firm lands, he said, required more draining than any other. About two feet below the surface will be found a layer of sand saturated with water. In proof of this he instanced the wells dug in the lower counties, in which the water rises above the strata of sand. This is caused by the pressure upwards of the water of the strata. And this continual uprising of the water keeps the soil above saturated. It is usual to attribute this condition of soil to stiff land. This was a mistake. It is, in fact, quite the reverse, and is inseparable from the causes above alluded to. Land in this condition cannot receive the water, as it contains already as much as it can hold. Superficial draining does remove the superficial water; but the underglut must be got rid of if any benefit to the land be looked for—the sand beds must be drained, and then the surface water will take care of itself. For this purpose deep ditching must be resorted to. Mr. Ruffin proceeded to give some very interesting and instructive experience on this point, in the course of which he hinted at a theory of his own regarding quicksands. Many years ago he commenced running a deep ditch through a large tract of his low grounds. His borings fully justified his belief in the underglut of the sand beds, as he found in almost every instance where he penetrated the bed, a copious flow of water upwards—in land, too, where a spring was never known to be. In his progress he was frequently interrupted by quicksands, which much retarded the work. He passed on over these places, but returned to them the following year; and then he found that what before was quicksand had now become hard sand. This he continued year after year, and each succeeding year he gained depth by this hardening process. This proved that quicksand is nothing more, in these cases, than sand saturated with water; and

that by draining, its character is thus changed. The final result exceeded his most sanguine expectations, and he succeeded in reclaiming his land, proving, at once, the existence of these undergluts, and the certain remedy of deep ditching.

His second great division was the swamp lands, and these he subdivided under two heads—land of firmer kind, and bogs. The former of these he regarded as almost useless; and the principles applied to those just noticed might be said to apply to them. The peat lands, he remarked, are found to be lower than swamp lands; and the interior of swamp lands is found to be higher than the outer portions; and lakes in swamps are found to be the highest portions of them. These lakes, no doubt, resulted from fire. He proceeded, at considerable length, to show the general uselessness of attempting to reclaim these peat lands, on account of the great expense attending the process, and then alluded to the policy of the State in regard to them. He believed that the State had not received the slightest advantage from her policy of the last eighteen years. During that period these lands had remained as so much dead capital. Had she given them away, some good might have resulted to her revenue, the sanitary improvement of the State, or the physical condition of her people. Or if she received nothing by that course, it would be doing as much as she has done. He could not tell what would be the result of the next eighteen years. But he was clearly of opinion that she should investigate this matter, as regards their tide, topography and the physical condition. Then the people might know what they were about in the purchase of them. The best means should be adopted to bring them into use. Give them away if necessary, on the condition that at least a portion of them be brought into use. If something is not done, they will remain a seedbed of pestilence, affecting materially, as they are now doing, the character of the States as regards health. With proper drainage, &c. lower North Carolina may be made as healthy as lower Virginia now is, and that is as good as needs be, and was produced by similar means. This is necessary, as the formation of our coast prevents the junction of salt and fresh water, so needful to health.

The speaker then returned to the peat lands, to show how rapidly they increase, by the decomposition of vegetable matter—elevating the body and extending the sides, to an incredible extent—and stated that but for the wants of man for fuel, the increase would be astounding. It was self evident, that the greater the increase of turf, the greater the quantity of water it will hold.

He then took a general view of the calcarious matter in lands. The Marls were extensive and very rich in North Carolina. In addition to the marls, abundance of lime could be obtained. In reference to this latter fertilizer, he remarked upon the quantity used from Thomaston, at fully five times the cost required to produce it at home. He alluded to the importance of lime, and showed the results in his own State, which has been prospering under its effects, in even a greater ratio than that in which it formerly declined, and then asked why N. Carolina should not avail herself of

such accessible advantages. In the course of his remarks on this branch of the subject, Mr Ruffin paid a high compliment to the farmers of Edgecombe.

The third branch of the question was now taken up—rotation of crops, &c.—and in this particular even the Edgecombe farmers were at fault. The continuation of one kind of crop he believed to be the cause of much of the disease in crops, & of existence of insects. Change crops—the more extreme the change the better. Not to the same description of crop; for insects in one kind of grain will be apt to trouble another kind. But change, say from corn to cotton, from cotton to peas, &c.—Mr. Ruffin then gave the results of his own experience in this matter, showing the best possible results. In rotation of crops he showed that lower and middle North Carolina, having a more advanced spring, &c., could profit much more than he had done by it. He thought that peas would be found, as an improver and cleanser, much more advantageous than clover; and with the pea, we need be at no loss for rotation. His own experience convinces him that cotton does better after peas.

His remarks applied more particularly to lower North Carolina. He had seen but little of the upper and middle portions. From what he had seen of the middle he thought it wanted lime, as in the case of middle Virginia. He also spoke of the uses and effects of plaster, and showed how it could be cheaply procured.

We do not pretend to report the address of Mr. Ruffin. We give but a few leading principles from notes loosely taken. We regret it cannot fully be hid before the people of the State, abounding, as it certainly did, in information of the most useful kind. Mr. Ruffin is an educated gentleman of the finest parts and withal a practical farmer of the first order. He was listened to with great attention, and fully compensated for the time spent listening to him. His opinions, being the result of well considered theory and extensive practice, will be received with due weight. He concluded by exhorting the members of the N. Carolina State Agricultural Society, to look to and foster their institution: to concentrate their efforts upon that one point, and not squander them upon less important ones. He was loudly cheered at the conclusion.

In response to questions from Dr. Holt, Prof. Emmons entertained the meeting with some valuable information on the condition of the land in the different sections of the State, and on the available supply of fertilizers for its improvement.

John S Dancy offered the following, which was unanimously adopted:

Resolved, That the thanks of this Society are due and are hereby tendered to the Ladies, who have given their valuable assistance in Floral Hall during the present Fair.

Maj C L Hinton offered the following, which was also unanimously adopted:

Resolved, That the thanks of this Society are due and are hereby tendered to Mr. Edmund Ruffin, for the very interesting and instructive address delivered by him this evening.

The President addressed a few words to the

meeting; and then, on motion, it adjourned to the Third Tuesday in October next.

PROGRESS. The American Farmer makes extracts from the pages of the 1st Vol. of that journal, published in 1819, showing that but little improvement has been made in the breeds and management of the hog since that period. It gives the weights and ages of a number then recorded, from which it appears the size and qualities were about equal to the best of the present day. One lot gained an average of one pound a day from the time of birth to that of slaughter, and weighed 150 lbs. each at 6 months old. One sow weighed 1106 lbs. The Editors correctly infer that through agricultural journals, the knowledge which was possessed in former days by very few comparatively, has been diffused extensively, and entered into much more general use; but real improvement in knowledge, either of the theory or practice of agriculture, is much less than we are prone to suppose.

MUSHROOMS. "Be pleased to give a statement of the best way to treat hogs in mushroom times, or what will prevent their killing the hogs. PETER CARMICHAEL, Laurinsburg, Oct. 3rd, 1856."

Give them regularly, once a day, a little salt in slops mixed with meal; a liberal supply of COLLARD leaves; and once or twice a week, in fair weather, a heaping teaspoonful of flower of sulphur, mixed with an equal quantity of glauber salts, to each hog: for small shoats, a little less dose. When laboring under symptoms of disease, double the dose. The above will be found to be an excellent preventive and remedy. If any of our readers are in possession of a better, we hope they will furnish us the recipe for publication. *Ed. Arator.*

Nobility and gentleness go hand in hand and when I see a young gentleman kind to his mother, and gentle and forbearing to his brothers and sisters, I think he has a noble heart.

"Though it be not in your power," said Marcus Aurelius, "to be a naturalist, a poet, an orator, or a mathematician, it is in your power to be a virtuous man, which is best of all."

JESTS AND, SNEERS.

Notwithstanding the best portion of the Southern States is composed of citizens from North-Carolina, and notwithstanding North-Carolina possesses advantages over all the Northern States; the wittings of those States will continue to crack their jokes over her supposed deficiencies. Even away over at the jumping off place, they are trying their wits at this sport, as will be seen by the following from the California Farmer: In North-Carolina it is frequent among her forests of fat-pine, for a lover in distress to send the fair object of his affections a bit of its staple vegetable productions, with an eye painted upon it. This signifies "I pine." If favorable to him, the young lady selects from the wood pile the best and smoothest specimen of a knot—this signifies "pine not." But if on the other hand, she detests him (there is no middle ground between detestation and adoration with young women), she burns one end of his message, and this generally throws the young man into despair, for it means "I make light of your pining."

LIST OF PREMIUMS OF THE HENDERSON FAIR.

LIST OF PREMIUMS

Awarded at the third Annual Fair of the GRANVILLE COUNTY AGRICULTURAL SOCIETY, held at Henderson, on the 8th, 9th and 10th of October, 1856.

BRANCH FIRST—LIVE STOCK.

THOROUGH BRED HORSES.

Best stallion over 4 yrs. old, R. P. Hughes,	\$10
Best stallion under 4 yrs. old, R. P. Hughes,	5
Best Filley, R A Hamilton	5

HORSES NOT THOROUGH BRED.

Best stallion over 4 years old, S L Parish	10
do colt over 2 & under 3 yrs old, Isham Cheatham	4
do colt over 1 & under 2 yrs. old, Mrs. S T Eaton	2
do colt under 1 year old, Nath. Macon	1
do brood mare over 4 years old, R B Henderson	5
do filly 3 years old, Wm. Ball	3

Harness, Draught and Saddle Horses:

Best pair match horses, S G Hayes	6
Second best pair match horses, Geo. W Kittrell	3
Best single harness horse, Dr. G W Blacknall	4
Second best single harness horse, J R Fuller	2
Best saddle horse, Stephen Satterwhite	4
Second best saddle horse, Thomas Evans	2
Fastest trotting horse, D M Dunham	4
Fastest pacing horse, Thomas Evans	4
Best heavy draught horse, John W Weaver	2
Best saddle pony, T J Blacknall	3
Grey mare, form, size and docility, Dr. A C Harris	3

MULES.

Best single mule, Arch'd Davis	2
Best mule colt, Jas. H Bryant	1

CATTLE.

Best native bull over 3 years old, Arch'd Davis	5
Second best native bull over 3 do. J R Smithwick	3
Best native milk cow and calf, L H Kittle	5
Best pair work oxen, Stephen Satterwhite	2
Best single ox, H H Rowland	3
Best improved milk cow, John Wiggins	5
Second best improved milk cow, J R Smithwick	4
Best heifer, improved stock, S S Royster	3
Best pair work oxen, improved stock, S S Royster	3
Best heifer, native stock, J R Smithwick	3

SHEEP.

Pet lamb, E H Kittrell	2
------------------------	---

SWINE.

Best boar, Snap Dragon, Master John Jones	3
Best killing hog, John W Vaughan	3
Best lot pigs, W P Harton	2

POULTRY.

Best pair geese, Mrs. Isham Cheatham	2
Second best pair geese, R J Wortham	1
Best half doz. Guinea fowls, Mrs. Isham Cheatham	2
Second best half doz. do. do. G W Weaver	1
Best lot of ducks, Mrs. Isham Cheatham	2
Best pair turkeys, Mrs. Isham Cheatham	2
2nd do do Allen Thompson	1
Best pair Shanghai Chickens, Mrs. J L McCraw	2
2d do do do Mrs. T J Blacknall	1
Coop native Muffs, J R Smithwick	1
Coop Cochín China 4 months old, G H Rowland	2
Best and largest variety, exhibited by Mrs. Isham Cheatham	4

BRANCH II---AGRICULTURE.

Best sample wheat, Arch'd Davis	2
Second best sample wheat, Mrs. S. T. Eaton	1
Best sample corn, do do	2

Second best sample corn, J C Lemay	1
Best sample tobacco, G H Rowland	2
Second best sample tobacco, Isham Ball	1
Best sample cotton, in seed, ten lbs, W L Brame	2
2d do do do under ten, W G Weaver	1
Best sample oats, in stalk, Wm. H Robards	2
2d do do do G W Weaver	1
Best sample Corn Field Peas, John M Barnes	1
Do do Sweet Potatoes, W P Harton	1
Do do Irish do, Sam'l Westray	1
Do do Turnips, Mrs J W Vaughan	1
Do do Carrots, Dr S G Ward	1
Do do Beets, Geo Harrison	1
Do do Onions, Mrs S G Wilson	1
Do do Cabbage, Dr S G Ward	1
26 Varieties Cabbage, C B Champion	2
Best sample pea vine hay, L H Kittle	2
1 mammoth gourd, H C Roberson	1

FOOD, CONDIMENTS &C.

Cakes and crackers, Mrs John M Barnes	2
Best sweet pickle, Mrs S S Royster	1
Do pickle, Mrs Ann Wiggins	1
Do green pickle, Mrs T T Estes	1
Do mangoes, Mrs S S Royster	1
Do citron, Mrs Nancy Turner	1
Do peach preserves, Mrs E T Marable	1
Do brandy peaches, Mrs Isham Cheatham	1
Do scuppernong wine, Mrs E T Marable	1
Do native wine, Mrs S S Royster	1
Do blackberry wine, Mrs L Y Speed	1
Do jelly, Mrs M K Foster	1
Do preserved peaches, Mrs M K Foster	1
Do lot bacon hams, John M Barnes	2
Do do sides, Isham Cheatham	1
Do do starch, Mrs J M Barnes	1
Do do shaving soap, do do do	1
Do do soap, Mrs Mary Hayes	1
Do do candles, Mrs A Steed	1
Do bl family flour, Sam'l R Hunt	2
Second do do, Col Quincey	1
Best bottle cider, G W Weaver	1
Best sample dried peaches, Mrs L Parham	1
Do do do cherries, Mrs J C Lemay	1
Do do do apples, Mrs S S Royster	1
Do do do pears, Mrs Joseph D Parham	1
Do loaf bread, Mrs W A Eaton	1
Do pound cake, Mrs S G Wilson	1
Do domestic cheese, Mrs A Steed	1
Do jar butter, Mrs G H Rowland	2
Second do do do, Mrs T T Estes	1
Best sugar dried peaches, Mrs A Owen	1
Do sample honey, Cap Jas Hunt	1
Largest variety, exhibited by Mrs P Wycho	3

FRUITS.

Best sample apples 1/2 bushel, G W Weaver	1
Do do quinces, D W Weaver	1
Do do peaches, Mrs W A Eaton	1
vegetable eggs, Mrs Ann Wiggins	1

FRUIT TREES.

Large orange tree, Mrs. H. H. Rowland	2
Raspberry vine, Mrs Ann Wiggins	1
3 Peach trees, W G Weaver	1
Vegetable egg plant, Mrs W P Harton	1

BRANCH III---MECHANICS.

PLOWS.

No 19 1/2 Soil cutter, Wm E Wyche	3
" 95 Michigan 3 horse, Pool, Locket & Co	3
Pittsburg 2 " W B Williams & Co	2
Pecksville 2 " Borum & McLean	3

No 21 Iron Beam 1 Horse, Wainwright, Vanhook & Co	3	Do domestic flannel, Mrs J M Barnes	2
Wedge and Twist, Joseph H Gooch	3	Do readymade pants, Mrs W H Weaver	2
Eagle Tooth Cultivator, W B Williams & Co	3	Do hearth rug, Mrs N E Gregory	2
Devil cultivator, Borum, & McLean	3	Do cotton diaper, Mrs J C Lemay	1
Colter, wrought iron root cutter, D C Richardson	3	Do linen do, do do do	2
2 horse hill side, Pool, Locket & Co	3	Do do towels, do do do	1
Subsoil plow, W B Williams & Co	3	Do figured blanket, Mrs S G Wilson	3
second best do do Pool, Locket & Co	2	Second do do do Mrs R H Wortham	2
3 iron beam, Wainwright, Vanhook & Co	3	Best cotton plaids, Mrs S G Wilson	1
Largest variety agricultural implements, Borum & McLean	5	Do do checks, Mrs J M Barnes	1
		Do pair bed blankets, Mrs E T Marable	3
		Second best do do, Mrs G W Weaver	2
		Best kersey, Mrs John W Weaver	2
		Do pair silk mixed socks, Mrs T Ascue	50c
		Do do cotton stockings, Mrs S G Wilson	50c
		Do do woolen socks, Mrs J C Lemay	50c
		Do do cotton do Mrs N J Hirsberg	50c
		Do do Tuft Counterpane, Mrs Isham Ball	1
		Largest variety 8 white " " " "	3
		" " of the above fabrics Mrs J M Barnes	4
		ORNAMENTAL NEEDLE WORK.	
		1 Girls embroidered dress, muslin, Mrs Nancy Turner	2
		1 Infants pink muslin embroidered dress, Mrs C G Blacknall	2
		1 " " " " " "	1
		French work collar & sleeves, Miss Nancy Steed	2
		1 Infants cap, Mrs L Y Speed	1
		1 Box Scotch embroidery, Miss M H Cheek	2
		1 Embroidered infants white dress Mrs C R Lewis	2
		1 " " " " Mrs C G Blacknall	1
		1 Honiton worked collar, Miss E Miles	2
		1 Transferred " " Miss Mollie Macon	1
		1 Pair sleeves, Mrs P E A Jones	2
		1 Scotch worked collar, " " " Jones	1
		Best ottoman cover, Miss Fanny Royster	2
		2nd " " Miss A B Champion	1
		1 Table cover, Miss Bettie Davis	3
		1 Jacenet collar, Miss S Baker	1
		Best embroidered handkerchief, Miss S F Cooke	2
		2nd " " Miss Edna Thompson	1
		Worked bobinet veil, Mrs J T Gales	2
		" " cape, " " "	2
		" Footstool cover, Miss Nannie Royster	1
		Piano cover, Mrs A E Mosely	1
		Silk bed Quilt, Warrenton Female College	5
		1 Embroidered Sack, Miss Mary F Jones	3
		Largest variety, Mrs. C G Blacknall,	5
		PAINTINGS.	
		1 Painting & leather work frame, Miss E Robards	3
		1 " " " Miss Nannie Royster	2
		1 " " " Miss M Royster	2
		3 Pieces oil painting, Miss Mary F Jones	5
		5 " Grecian " Warrenton Female College	5
		1 " " family scene, Mrs Carrol	3
		3 " Crayon " Miss Bettie Cheek	3
		2 1 " " with India Ink, Miss E Miles	3
		DISCRETIONARY.	
		1 box fancy hair work, miss Lucy E Foster	4
		1 do toy basket, Miss C A Harris	1
		1 ermine, Miss M L Stone	1
		2 feather baskets, Miss Sally Stone	1
		1 fancy work do Miss Elizabeth F Cox	1
		1 pair hair bracclets, do do do	1
		1 do overshoes, Miss A Parham	1
		Bantam chicken and poodle, Miss R L Allen	1
		1 watch guard, Mrs R J Wortham	1
		Chrystalized flowers, Mrs L Y Speed	1
		Wheat house model, R B Minor	1
		Dental specimens, Dr Balderston	2
		Infant sulky, D C Richardson	2

WAGONS, BUGGIES, &C.

Best 4 horse wagon, Eaton Haithcock	4
Do 2 Do, Do De	3
Best rockaway, do do	6
Do top buggy, do do	6
Do shifting do do T H Blacknall	3
Do open do, Eaton Haithcock	3

HARNESS, SADDLES, &C.

Best set carriage harness, Hardy Harris	4
Do do double buggy harness, do do	3
Do do single do do Dr G W Blacknall	2
Do saddle, bridle and martingals, H Harris	3
Do stage harness, Hugh McCadden	2
1 pair medical saddlebags, H McCadden	2
1 do travelling bags, do do	1
Best kip skins less than 6 do do	1
Do 6 sides russet leather, W H Hester	2
Do sheep skin, do do	1
Do side sole leather, do do	1

MACHINERY.

Self adjusting ox yoke, Borum & McLean	2
Best fan mill (Montgomery's Patent) Borum & McLean.	2
Propeller straw cutter, Borum & McLean	2
Hydro thermal churn, do do	1
Double corn sheller, do do	2
Little giant cob crusher, do do	2
Dasher churn and water pail, W G Weaver	1

CABINET WORK.

Best wardrobe, C Burnet	2
Best wire safe, do do	2

HATS, SHOES, &C

Best plantation hat, Miss M Edwards	1
1 pair gentleman's shoes, Dr. J Hester	1
1 do do do, Joseph Coley	1
1 silk bonnet, Mrs. Ben Wyche	1
1 velvet bonnet, Mrs L Y Speed	1

FRANCH 4: MANUFACTURES.

HOUSEHOLD AND MILL FABRICS

Best bed quilt, Mrs Mary C Boroughs	3
Second best do do Mrs M E Gregory	2
Best white counterpane, Mrs John Powell	2
Second best do do Mrs Frank Gordon	1
Best woolen jeans Miss E Ellington 9 yrs old	2
Second best do do Mrs John M Barnes	1
Best linsey, Mrs C Daniel	2
Second do do Mrs J M Barnes	1
Best woolen vesting, Mrs W H Weaver	2
1 piece wool carpeting, Mrs Dr P W Young	4
1 do do do, Mrs Dr W Lewis	4
Best do cotton do, Mrs J J Kelly	2
Do sheeting, Mrs J M Barnes	2
Do tow cloth, Mrs Ann Owen	2
Do ready made gentleman's coat, Mrs E Jones	4
Second do do do Mrs W H Weaver	3
Best do do vest, Miss S A Tate	2
Second best do do Mrs W H Weaver	1
Best do do shirt, Miss Helen Huff	2

Miniature Smith tools, D C Richardson
 Face screen bead work, Miss Bettie Cheek
 Box wax flowers and fruit, do do do
 Lamp mats, Miss A E Marrow
 Watch pocket, cane, hatrack and &c. B S Gill
 1 work ease, Miss E Miles
 1 rigolette, Miss India F Turner
 1 fascinator, Miss M H Hunter
 Counterpane fringe, Mrs Isham Cheatham
 Tape fringe, Mrs James Cottrell

For a very large collection of rare seeds and vegetables, among which we notice, Spanish Windsor Beans; Nepaul Barley; Poland Oats; Turtle Soup Beans; Case Knife Beans; White Dutch Beans; Scarlet Dutch Beans; Wyandott, Canada and King Philip. Prolific Corn; Scotch, Siberian and Sea Kale; Chinese Hoosung; Chinese Radish; Chinese Sugar Cane; Spring and Winter Colza or Rape; Cape Broccoli; Watcheren Cauliflower; Earth Almonds; Fig Tomato; Winter Savory; Sweet Basil; Borage; Roquette; Scorzonera; mangold Wurtzel; Green and radish Beet; Beue; Sweet Anise; Dill; Orach; Celeriac; Hamburg Parsley; Chicory; Stringless Snaps; Asparagus Snaps; Chinese Red Suaps; one thousand to one Snaps; Red Cranberry Snaps; Resene Grass; white Belgian Carrots; High Shouldered and Long Smooth Parsnips; Japan Peas; Wild Rice; New Zealand Spinach; Giant Curled Parsley; Dourah Corn; Skirret; exhibited by John J Wyche, Henderson, 5

Any errors in the above report, will be cheerful ly corrected, when pointed out.

Premiums must be called for within three months, according to the rules of the Society.

Persons living at a distance, who may wish their premiums remitted by mail, will please send a postage stamp to prepay postage.

Applications can be made to either of us, or Charles H Wyche, Treasurer.

G W BLACKNALL.

A C HARRIS.

Henderson, Granville County,
 No. Ca. Oct 1856.

WYCHE'S CULTIVATING PLOW.

PATENTED 26TH FEBRUARY, 1856. (The 1 Bladed Plow,) awarded \$20 premium at the last N. C. State Fair; with cutting blades in the place of a moldboard; cuts, divides and turns over the soil; depositing the finer parts in the furrow, and turning over the turf, clods, &c., on the surface. Is cheap, light, and lasting, and easy to both driver and team. Admirably adapted to almost any purpose for which the plow is used.

For license to sell, with further information, address

W. E. WYCHE.

Brookville, Granville Co., N. C.

J. H. Gooch, Oxford, N. C., solicits orders for the above plows.

June 16, 1856.

4-11f.

North Carolina Arator.

RALEIGH, N. C., NOVEMBER, 1856.

We take pleasure in calling public attention to the advertisement of Mr Perkinson, Carriage-maker. He obtained a premium at the late State Fair, which was no doubt well deserved—as he does his work substantially and handsomely. His shop is near Mr Holloman's Blacksmith Shop, in this City.

We also cordially invite attention to the advertisement of J. Lindley, offering a fine collection of fruit trees for sale; and we take this occasion to correct a typographical error or two which appeared in his numbers describing the varieties of the peach. For "uniform" read "reniform" and where the Washington No 75, is called "the finest of aliens," it should read "finest of elings."

TAX DOGS. Our Legislature passed one act at the last session, for the protection of sheep from dogs; but it is totally inefficient. Supernumerary dogs must be taxed, and heavily taxed, as the only adequate remedy against the destruction of sheep by that carnivorous animal. Let every house-holder be entitled to one dog exempt from taxation, and every additional dog in the family, whether claimed by Tom, Dick or Harry, be taxed two or three dollars PER CAPITA. Our legislators have to tax their brains to find objects of taxation to raise the requisite amount of revenue; and why should they overlook this, the fairest and most legitimate object of any within the scope of their powers? The superabundance of dogs in the State is a grievous nuisance to the farmers. But for their ravages, almost every agriculturist would raise sheep, and our State would become one of the largest sheep and wool-growing States in the Union; and would realize therefrom a vast amount of wealth. It is truly said by a writer in the South Carolina Agriculturist, "were the legal profession encumbered with any similar nuisance, we know the Layers in the Legislature would soon see to it that the nuisance was removed." Then, why cannot the agriculturists, who are members, accomplish a similar end? Whilst we are causing two blades of grass to grow where only one grew before, let us extend ample protection to our herbivorous and graminivorous animals, even though it should be at the expense of the carnivorous.

PRICES OF PRODUCE.

Wheat has been fluctuating during the past months, ascribed to the variable state of the weather in England, shrewdly suspected, however, to have been artfully regulated by the wishes of speculators. It is now selling (1st Oct.) at \$1.40 to \$1.62 in Petersburg, and will, we think, go up higher.

Cotton is selling at 8½¢ and upward tendency. Our planters are picking, ginning and sending off daily. The crop in this section is considerably over an average one.

Corn is selling at \$4, to 4.50, and the general shortness of the crop will keep it high.

For Pork, it is rather too early. But it will probably command \$8, or \$8.50 per hundred.

The Governor has appointed the 26th November, as a day of Thanksgiving.

WHEAT AND TOBACCO.

The interesting articles on the culture of Wheat and Tobacco, which will be found in the preceding pages of this number of the Arator, were copied from our valuable cotemporary the Southern Planter, published at Richmond, Va. The modes of cultivation in that State will be found generally suitable to North Carolina.

THE GRAPE AND WINE.

We do not believe that a more profitable business could be entered into in North Carolina, than that of raising grapes and making wine. It has been found in other parts of the United States, to be a most agreeable, healthful and profitable pursuit; and why should it not be in our State? There are already, within fifteen miles of Cincinnati, two thousand acres in Grapes, chiefly of the Catawba variety, a native, (if we mistake not,) of North Carolina. Notwithstanding the crop falls short this year at least one-third, it is still found to pay a handsome profit. Mr Longworth who has kept an account with his vineyard for nine years, states that the average of his yearly profits, would be not less than three hundred dollars per acre! What business is there, among us, that can compare with this? This is no *morus multicaulis*, Iverson grass, or Oregon pea humbug. It is a matter that has been proved for nine successive years. And there can be no doubt that it would succeed as well in North Carolina as in Ohio. We have unquestionably the advantage in climate. Will not some of our enterprising citizens immediately connect respectable vineyards with their farms, and show what can be done here as well as elsewhere? Mr Longworth has 140 acres of bearing Catawbas, yielding, let it be remembered, at least \$28,000 per annum! How far into the shade does this throw our whole host of corn, cotton and tobacco planters!

THEORY AND PRACTICE.

The American Farmer impressively illustrates the importance of connecting together knowledge and practice in farming, by the old story of a blind man and a cripple. The cripple, on the shoulders of the blind, represents the head or science, and the blind man the hand or practice -- showing that the "educated head must have the help of the practised hand, or its wise devices will fail of a proper execution." From this is drawn the following useful lesson: "Let agricultural science come down from the stilts, and seek the aid of a skilful practice in working out problems, and let hardhanded, hardheaded practice acknowledge his blindness, and take upon his broad shoulders keen sighted science to guide him, and the result will be a wholesome progress yet unheard of in agriculture. The head and the hand must both be educated."

The Seaboard Agricultural Society of Virginia and North Carolina, will hold its second annual Fair at Norfolk on the 11th to 14th instant. They offer a tempting premium list, and a cordial invitation to the public to attend.

COTTON PICKER.

The American Farmer notices a new and important implement, which we have long thought might be invented, to aid in picking out cotton. It says an arrangement intended to facilitate the picking of cotton has recently been patented by G A Trowe, Esq. of Cleveland, Ohio. The mechanism consists essentially of a tube, provided with a gearing and endless revolving chain, the whole weighing less than six pounds. It is suspended from the right side of the person by a strap passing over the shoulder, and is kept in motion by means of a lever or crank operated by the hand or fingers. By presenting the tubular point to the cotton ball, it is immediately seized by the chain and conveyed to the opposite end, where it is freed, by means of a stripper, and deposited in a bag suspended at the bottom. The bag is rapidly filled and emptied. This improvement enables one field hand to pick more cotton than five to eight hands by the old method.

EXPERIMENT IN CORN GROWING.

The American Farmer gives the following as the method of a Delaware Farmer, who has not failed in twenty years to make a good crop of corn: He plants always on a sod two or three years old. This is turned down as deeply as three horses can turn it, rolled and harrowed well. The ground is laid off for planting as deeply as possible without turning up the sod. The corn, lying at the bottom of this furrow, is covered with two or three inches of earth. Its first roots strike deeply into the ground, where the rotting sod keeps up a continual moisture. The corn being set deep in the ground, the furrow is filled up by the working, the plant is well sustained against storms, and there is no occasion for "hilling up." He works the surface thoroughly and quickly, and finishes by the time it is as high as his hips. We doubt not this is an excellent plan, except that we think the Delaware Farmer finishes a little too soon.

THE LATE STATE FAIR.

We regret that, in consequence of severe indisposition, we were unable to attend the Fair. But we are gratified to hear, on all sides, that there was a much larger amount of stock, machinery, implements, fruits and articles of every description, on exhibition, than at any previous Fair; though the attendance, because of the inclemency of the weather, was not so numerous. The crowd was, however, respectable in numbers.

We are pained to learn that gambling and the sale of liquor were allowed on the grounds. This was palpably demoralizing, and cannot fail to receive the condemnation of the virtuous portion of the community. Improvement in morals as in knowledge, should be a leading object of the institution; and every thing that tends to corrupt and debase the heart and manners, should be rigidly excluded by its managers.

The Proceedings of the State Society will be found in this number. We shall hereafter publish the Address of Prof. Mitchell and the list of Premiums.

EXTRAORDINARY POWERS.

There is one feature in the proceedings of the N. O. Agricultural Society, published in this number of the Arator, to which we respectfully object: We allude to the resolution investing the Executive Committee with legislative or supreme authority. We are willing to give that Committee the largest amount of discretionary power—aye, even a *carte blanche*, if necessary—in compassing the objects of its creation. Its legitimate acts extend only to a limited period; whereas laws, the offspring of legislation, are permanent; and we cannot agree to clothing the committee with the law-making power. This high attribute of sovereignty cannot be conferred on executive officers without violating the spirit and principles of our government and jeopardizing public liberty itself. It is true, in this instance, the measure is confined to a very narrow sphere, and may be therefore considered quite insignificant; but the principle is wrong, the precedent is dangerous, and we can see no necessity for it. Moreover, it is a palpable violation of the Constitution of the Society, unless adopted as an amendment to that instrument, by a two-thirds vote.

FAIR AT HENDERSON.

The list of premiums awarded at the Henderson Fair will be found in this number of the Arator; shewing a large number of excellent articles exhibited and a handsome amount of premiums disbursed. Sickness only prevented our attendance. We learn there was a large concourse of visitors, and much spirit and interest evinced on the occasion. Long may it continue, and may much good result from its operations!

CHEAP ICE HOUSE—An exchange paper furnishes the following:

We will give you our experience with a cheap ice house. Four years ago last January we had one dug of the following dimensions, viz: ten feet every way; this was dug in high ground, into firm clay; after getting it this depth, we had the bottom made into a bowl shape, and laid down small logs, across it at

surface we had a pen made of logs, around the edge to the height of four feet, and the dirt that came out of the hole was thrown up and rammed around the pen; this pen increased the depth to fourteen feet. The part in the ground has no walling of any description. When filling, we have a small quantity of straw kept between the ice and the earth. Fifteen wagon loads will fill my house, and it has been empty but once in four years, and that was in November, and then it was emptied by taking out cartloads at a time for extraordinary purposes. After the bank was thrown up around the pen, we set in four blocks at the corners, and laid upon them two courses of logs twenty feet long; they were cut this length in order to throw the caves some six feet from the ice, and thereby secure it from the intrusion of water. There was left sufficient space between the logs to admit a free circulation of air. The walls have crumbled very little—more the first year than ever since, and this was caused by rats. We paid a workman four dollars, for putting on the roof, hanging doors, &c., and this was the whole cost, save the labor of four farm hands, two days digging and putting up the logs, and the cost of materials.

GRAPE CULTURE.

Mr Charles Axt has several vineyards in successful operation in Georgia and Alabama, and affirms that he has tested the matter sufficiently to know that the climate of the South is unrivalled for the grape culture, and that with her cheap lands, good soil, and slave labor, she may, if she will, in a few years, control the wine, as she now does the cotton markets of the world. She has, he thinks, great advantages over the Western States and Europe for the culture of the vine. The lands in Europe, he says, suitable for grapes, is worth one to four hundred dollars per acre whilst, in the South the grape flourishes upon almost any soil, which sells at not more than three to ten dollars per acre. He draws a very advantageous contrast in another important particular, which tells well in favor of the sunny south. In the West, a good average for a vineyard six years after cutting, is three to four hundred gallons per acre; whereas in the South, one thousand gallons of wine per acre are easily made the third year after planting the cuttings; and from the fifth year onwards, each acre will average from 2,000 to 2,500 gallons of pure unadulterated wine. The warm sunny summers of the South are indispensably necessary to a good crop of grapes and finely flavored wine. Here, then, is a fine field for new and profitable enterprise in North Carolina. It cannot be doubted, it would tend to increase both the wealth and good morals of our people, by giving them a highly profitable employment, as proved to be by Messrs. Longworth and others, of

the West, and Mr. Axt, of the South; and furnishing a mild and pure beverage, in the place of the adulterated and fiery and demoralizing alcoholic drinks which now flood the country from Europe, producing frightful and wide-spread ruin in every direction. Let all our farmers raise each a small vineyard, and let many go into it largely.

TEXAS. There are no papers among our numerous exchanges, that we peruse with greater interest than the "Civilian and Gazette," and Texas Christian Advocate," published in Galveston: These two papers kindly exchange with the Arator, and come to us regularly. The former is a political and commercial journal, large and city-like, ably conducted, and always filled with interesting matter. The latter is the organ of the Methodist Church in that State, and is indeed an able and respectable "Advocate." Most cordially do we recommend these papers to our readers. Dates to 21st October have been received, which give encouraging and gratifying information of the steady advancement of the glorious "Lone Star State," in all its social, moral and religious relations. Railroads are being constructed; large appropriations have been made for the improvement of rivers and dikes; schools, colleges, and churches, are rapidly multiplying; religious revivals are numerous and extensive; and, notwithstanding the extraordinary drought of the past summer, and the shortness of crops in some localities, the grass is growing, great numbers of cattle are fattening, much produce is made for market—an average crop of cotton, sugar, wheat—and there will be no want any where. In 25 counties alone, in north western Texas, 1,818,000 bush. wheat of the best and heaviest kind were made this year: In Harrison county, a farmer raised from 5 bush: seed wheat, 150 bush: Flour, in the west, where made, brings \$5 50 per bbl: wheat 10 to 75 cents per bush.

FIRST GENERAL FROST.

The first general killing frost of the season visited us on the night of the 31st October, being ten or twelve days later than usual. The weather soon became warmer, and on the 2nd inst it commenced raining, with the prospect of several days' wet weather.

CUMBERLAND COUNTY FAIR.

This Fair commenced on the 29th ult, and lasted three days. We are gratified to learn from the Fayetteville Observer, that the weather was delightful, the attendance respectable, the articles and stock exhibited numerous and of superior quality; all manifesting enterprise, zeal, and progress; and all affording pleasure, instruction and encouragement. They do things right in old Cumberland: keep up their County Agricultural Society and Fairs with becoming spirit and activity: setting a noble example to every county in the State. The farmers of Wake ought to hang their heads in very shame for suffering their Society to go down.

RAT POISON. A writer in the South-Carolina Agriculturist says he has used cobalt dissolved in water successfully. In a few days after setting this poison in the places infested with rats & mice, not one was to be found alive.

TEXAS LAND MEASURE. In all first class Headright Patents issued by the Spanish, Mexican and Texian Governments, the quantity of acres is expressed in Leagues, labors and varas: it is therefore necessary to make the following explanation.

1 vara is 33 1-3 inches.

1 acre is 5646 square varas which is equal to 4840 square yards, or 58,080 square inches.

1 Labor is 1,000,000 square varas equal to 177 acres.

One third League is 8,333,333 square varas equal to 1476 acres

1 League is 25,000,000 square varas equal to 4428 acres.

1 League and 1 Labor is 26,000,000 square varas equal to 4605 acres.

To find the quantity of acres in a given number of square varas divide by 5646.

A LARGE WOOL BUSINESS. The wool crop of Australia is said to be better than ever this year, notwithstanding the attention given to gold digging of late in that remarkable island. Some of the Australian sheep owners have been lately attending the sale of their clips in London, and there were men whose flocks numbered 60,000 head, giving a clip of 300,000 lbs of wool in the grease, which brought 15d say 30 cents, being a value of \$90,000 for a clip, of which half is profit. This is quite a business.

AGRICULTURAL FAIRS. The following remarks are from the conclusion of an article on this subject in the Philadelphia Ledger of a recent date: "There is danger, however, that the whole system may be ruined, by the growing tendency to transform fairs into temporary race courses. We see, with regret, an increasing proclivity in this direction. Every year, at our principal fairs, the race track is enlarged, while the stalls for cattle are comparatively neglected. Go to any fair, the one at Powelton, for instance, and you will see tens of thousands breathlessly watching the struggle between competing horses, while only a few hundreds are to be seen, scattered here and there, on other parts of the ground. The effect of this, surely, is not to foster a love of agriculture, but rather to implant a passion for horse racing. Of course, we are aware of the reason, which induces those who get up fairs to make the race track so prominent: they wish the fair to pay, and they find this the readiest method. But we submit that the excessive development given to this feature is at war with the true purposes of such fairs, and that sooner or later, it will bring them into discredit, if not lead to their decline."

TO MAKE PRIME VINEGAR. Mix one qt of molasses, three gallons of rain water, and one pint of yeast. Let it ferment and stand four weeks and you will have the best of vinegar.

GEORGIA POMOLOGICAL SOCIETY.

At a Fruit convention held at Athens recently, a Pomological Society was organized, of which Rt. Rev. Stephen Elliott, D. D., was elected President; Mark A. Cooper, Esq., Vice President; Wm. N. White, Secretary, and James Camac, M. D. Treasurer, for the ensuing year.

BARLEY WITHOUT BEARDS!!!

It is even so. A variety of barley has been discovered in the gulches of the Himalayan Mountains, entirely free from those annoying and poisonous beards attached to all our common varieties.

The undersigned obtained 7 grains of this new variety three years ago, and being much pleased with its general appearance and productiveness has spared no pains to multiply this small quantity as fast as the Shanghais and other birds would allow.

Its merits for grinding or malting have not been tested, and the quantity is now too small to squander in that way, when every tiller of the soil who sees it, is anxious to have a few grains, not doubting it will prove a valuable acquisition. I have sufficient however, to furnish all persons interested who will be likely to see this notice, with one head each, containing 30 to 60 grains. Send me your address, on a stamped envelope and I will enclose a head, and send it back by return mail, with printed instructions for cultivating in a way to insure a large return from a small quantity of seed. Should this new variety be found to answer all the purposes of the common barley, a few years will suffice to drive "Barley Beards" from the country.

Should any person desire more than one head, I will send a package of 700 to 800 grains securely enveloped, by mail post paid for 25c., accompanied with a few heads to prove the fact of its being beardless.

Address, I W BRIGGS. West Macedon, Wayne County, N. Y.

The Editor of the Arator has received a head or two of this Barley, and hopes soon to receive a small package of the same, which Mr. Briggs has promised to send, and will take pleasure in exhibiting it to all who may desire to see it.

YOPON.

We are indebted to the kindness of H. E. COLTON, Esq. for a small bag of Yopon Tea, which we regret did not come in time to be exhibited at the Fair, as one of the valuable natural products of our State—valuable as a pleasant and healthful beverage. It is used by many in the East in lieu of the foreign teas.

We are indebted to the polite attention of Hon. DAVID S REID for several valuable Congressional Documents.

SUBSOILING. In answer to "A Reader" Summit Co, O. we can state (says the Country Gentleman) with confidence, that subsoiling will be of very little, or at best of quite temporary benefit, if performed on wet land. For, when well soaked with water, the parts of the subsoil that have been broken and crumbled by the subsoil plow, are again made into a compact mass by the abundance of the water, and the benefit of the operation is lost. Draining—draining—DRAINING, is the thing without which subsoiling is soon lost, and manure is locked up in soil, and cannot be available.

Millet is about equal to Indian Corn for plowing in, and not equal to the same bulk of clover

Will some of our readers who have had experience with the best way of curing it, please furnish us with a statement.

IMPORTANT SUGGESTIONS.—At a meeting of an agricultural committee, at the plantation of Capt. Bird in Abbeville District, S. C., inquiries were made about the ravages of the bud or cut worm in corn, and the rust in cotton. The latter was said to be effectually prevented by scattering broadcast a small quantity of salt just before bedding up the land subject to rust. To prevent the former two methods were suggested: first, bed up the corn land, subsoil the water furrow and plant the corn in it; this places the corn lower than the worm goes, and hence frees it from the attack of this disastrous little pest. The second was to sow oats broadcast on the corn land, sufficiently early to allow its appearing above ground before the corn is planted; then planting the corn in a single furrow, covered by two others, leaving the middles growing in oats to feed the worms, until the corn is large enough to withstand its attacks.

There was a considerable fall of snow at Lynchburg Va. on the 16th October.

Strawberry beds not already dressed, should be speedily cleaned off and treated with a supply of well rotted manure, mixed with one tenth ashes.

TROUT. Dr. Garlick, of Cleveland, presented at the Ohio State Fair, a glass reservoir containing a number of young trout, artificially reared by him.

For the Arator.

Edgcombe, Oct. 24th, 1856.

Mr. Editor:

Dear Sir: At your request I will try to comply with my promise. Last winter I commenced with 150 hens. During that protracted snow, I had 30 or 40 hens to die from some unknown cause. For that number, I have six hen houses, in different parts of the lot, provided with nests for them to lay in and roost, so arranged that they can have free access to the lots and adjoining fields.

I have them well fed with corn and oats twice a day. I have the nests visited every evening, and the eggs taken out. When I find a hen wishing to set, I have her shut up for a few days and well fed, and she will commence laying again in a few days. About the first of March, I commence setting, to raise. I never set less than 2 or more on the same day; so that they may hatch at the same time. I put 25 young chickens to the hen, and shut up the balance of the old hens to go to laying again, which they will do in a few days, if they cannot carry their chickens.

Yours &c.

B. A. JENKINS.

FALL PLOWING. When the object aimed at in plowing, is to render a clay soil more friable, and when there is no sod or sward to be rotted, it may be carried on as long as the ground is free from frost. The less the land is exposed to drying winds, rains, &c., after plowing, the greater will be the effect of the winter's frosts in making it mellow. To obtain the utmost benefit the land should be thrown up in narrow ridges, or in such a way as to allow of its greatest exposure to the air, and its ready crumbling.

FOR THE ARATOR.

A SURE WAY TO IMPROVE.

Mr. Editor: I propose to give you, briefly, my notions about the improvement of poor or worn-out lands. The first question to decide, is, can they be improved so as to repay the labor and expense? To this I answer, emphatically, yes. I never have seen land, once productive, so reduced, that it could not be reclaimed profitably by its owner. No one, except under peculiar circumstances, would be justified in purchasing a wornout farm; but being the possessor of such an one, the owner, in nine cases out of ten, could, by skillful management, do better by improving it, than by selling and buying again.

This brings us to the second inquiry, which is, what is a sure way to effect the desirable improvement? There are probably various methods, as there are different ways of doing almost every thing—different routes, they say, even to the Kingdom of Heaven; but these must all conform to one great leading principle—that of adding permanent fertilizing substances to the soil. From what source shall these be procured? This a question of very great importance; for in the proper answer to it lies the true philosopher's stone—that mysterious something, from the laboratory of the alchemist, which converts whatever it touches into gold.— Shall these substances be imported from abroad? Shall we look to Mexico, Peru, or the Islands of the sea for their guano? Shall we spend our money for the "villainous compounds" which are vended from the humbuggeries of the chemical mountebanks of the North? Or, shall we rely upon our own resources? I challenge any one to come forward and show that he has given any permanent improvement to his land by the use of guano alone; and it is doubtful whether a majority of those who have used it for several years, have, upon the whole, been profited by it at all. If any can testify to the contrary, let them do it. Their silence will tend to confirm my opinion. As to the compounds, "phosphates," "super phosphates," &c., which are manufactured at the North, I have not the slightest confidence in any of them, except that of Prof. Mapes, and our State is too distant to pay for its transportation. Even many of their own farmers complain of most of these nostrums, prepared for sale. It follows, then, as an irresistible conclusion, that we must rely upon our own resources. These, in many places, are abundant; and it only requires system and a determined will to bring them out. They may be found in the kitchen, the privy, the horse stable, the cowpen, the hog sty, the hen house, the woods, the marsh, the fence corner, the field, the sea shore, creek and river bank, and in many rich

beds in the earth; as well as in the green crops, which may be turned into the earth; consisting of suds, slops, urine, animal manures, woods mould and trash, leaves, straw, weeds, stalks, mud, muck, scrapings of various deposits, ditch banks, seaweed, ashes, lime, marl, cow-pea, &c. How these may be successfully managed, shall be the subject of a future number. Lest I weary you, I will conclude this. Respectfully yours,

LITTLE FARMER.

Potato Diggins, Oct. 14, 1856.

FOR THE ARATOR.

A SURE WAY TO IMPROVE—CONTINUED.

Mr. Editor: I gave you the materials in my former number. Now comes the most difficult and important part of my task—to show how they may be employed—would I could point out the very best method—to ensure the end indicated by the standing head of my articles. They must, without doubt, be worked up into compost; but the perplexing question recurs, "How and when?" It might be answered, in all sorts of ways and at all times; and the wise, taking the hint, in the exercise of a sound judgment and untiring industry, would work out for themselves a successful mode. But the great majority require a specific plan. I therefore offer mine, in the hope that others will present theirs thro' your paper. Better there are, and he who brings them out, will receive the thanks of the public.

The first step is, systematic preparation, which must be made according to means and extent of operation. Stables, lots, cow-pens, and hog-pens, must all be provided and kept in good order. Manure carts or dumping wagons must also be provided. With these, the stables, lots and pens must be kept supplied with an abundance of materials, such as I have already enumerated, especially, stalks, straw, leaves, muck and woods mould: this must be done in a systematic manner. After one supply has been sufficiently saturated and trampled, it should be promptly removed, (best to the field at once,) thrown in heaps and covered a foot deep with clay, if in sandy soil, or light sandy woods mould, if in clay soil—to be thoroughly mixed with the covering a few days before using. Let the cowpens be always liberally supplied with some kind of absorbents—straw, leaves and mould, and so soon as well mixed and trampled, plow and scrape it in heaps and haul it out; after which put in another bountiful supply. When removed the second time, leave enough to enrich that spot, and also remove the pen. All this should be done in two or three months. The hog-pens, particularly the fattening pen, should be treated in a similar manner, as nearly as the circumstances will allow. In winter, the cow-pen should be provided with racks for straw or

hay and ample shelters, and the ground should be kept covered several inches deep, with straw, corn stalks, leaves and other trash: so *also should the stable lot; leaves or straw bedding should be daily given to the horses, in their stalls, which should be regularly cleaned out, and the contents thrown on the compost heaps. There should also be a yard compost heap, on which all the offal, dirty water of the kitchen, sweepings and other trash should be thrown daily and covered with rich fresh earth from the woods, a large pile of which should be kept convenient for the purpose. All the urine of the premises should be kept and used in saturating the dry materials when the compost heaps are put up.

All deposits from the privies should be used for the same purpose, first deodorizing with coperas water, plaster or charcoal, and then reducing it to a liquid by adding water to it in a suitable pit dug for the purpose. To compost heaps not intended for hasty decomposition, ashes and lime should not be added until they are stirred and turned over for the last time, shortly before use. In making the heaps with the barn yard and stable and other animal manure, let it be spread in alternate layers of manure and turf, mud or rich earth, of five to ten inches thickness, until a large low heap is made, so that the plow can be used in mixing it, when it becomes necessary to turn it about for that purpose.—It should then be thrown up into a higher and more compact bulk and covered again with earth. When the ashes or lime is added, one-twentieth of the former and one-thirtieth of the latter will add greatly to its vitality and strength.

For making compost heaps intended for speedy decomposition, a different process is observed. A place must be selected where the ground has a solid clay foundation; the top of the earth must be scraped away, and a trench dug around it, to conduct the liquid exuding from the heap to a tank prepared to catch it on the lowest side of the heap. Previous to throwing on the materials, about 20 barrels of liquid manure must be prepared in said tank, for saturating the heap when first erected, by mixing together the following materials so diluted with water as to be easily dipped up: Night soil or hen manure and urine, or other strong feculent matter, 400 lbs.; 30 or 40 lbs. soot; two bushels ground plaster; one bushel quick lime; one bushel quick ashes; a peck of salt; five pounds coperas; and two pounds salt petre. After being dissolved in water, the mixture should stand three or four days before using.—It will make a heap yielding twenty-five two horse loads first rate manure, being composed of the liquid, straw, cut stalks, weeds, leaves, and woods mould, or as many of these as can be procured. The

as is to be commenced by a layer of straw, stalks

or weeds, &c. eight inches thick; which must be saturated with the liquid well stirred up, by means of a bucket fixed with a long staff running through it for a handle. Then spread on a load of woods mould, to be covered with another layer of the straw, &c. to be saturated as before. Thus the heap is to be carried up until it reaches the height of eight or ten feet. Let the mud and remaining mixture at the bottom of the tank be thrown on the top, and all covered over with mould 2 or 3 inches deep. The liquid that drains off will run into the tank, and is to be used in saturating the bulk again in a few days. The mass should be then perforated with a number of small holes by forcing a stick down all about on the top of it, which will speedily convey the liquid through the whole, which is necessary, since fermentation will not take place unless a sufficient heat and moisture is kept up; and to prevent too much heat, which may be ascertained by thrusting down a stick, pour on liquid. In about two weeks the process will be completed.

In applying manure, let the rule be to give it to the land liberally BROADCAST.

In the Eastern part of the State, shell lime, marl and sea-weed may be procured abundantly, and used profitably, so as to bring many localities into a high state of fertility.

The turning under of green crops, is another means of improving, which must form a part of the system. The pea is unquestionably the very best article for this purpose in our climate.

Alternation of crops and rest of land, must also be added, as an indispensable part of the system.

Let this plan be adopted, and faithfully executed; and if it does not prove a sure way to improve, then you may banish me to Texas, California, Nicaragua, the Feejee or Fiddle Stick Islands.

I shall hereafter furnish some examples and additional particulars. Yours, &c.

LITTLE FARMER.

[Potato Diggins, N. C. Oct. 23, '56.

The kissing stories, of which we have recently given several, seem to beget more.

A gentleman in Richmond, Virginia, writes to us that in the beautiful little village of Lexington, in the valley of Virginia, a young gent having devoted himself to the special entertainment of a company of pretty little girls for a whole evening, demanded payment in kisses, when one of them instantly replied: "Certainly sir present your BILL!" Ex.

FROM HANOVER CO., VA.:—"Our crops of wheat are short in Eastern Virginia, except in a few localities—say three or four counties in the Piedmont District of our State. Fly, joint-worm, chinch bug and drought, superadded to a hard winter, are the causes of the failure of the crop. The most of us are at a stand, and hesitating,



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop known as **JENKINS' OLD STAND**, would announce to the people of North Carolina generally, that he is prepared to manufacture in a beautiful and durable manner, Coaches, Buggies, Rockaways and vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c., of every description, and as my facilities for repairing are good, the public may rely upon having their work done at the *lowest possible rates*, and in a manner *unsurpassed* by any other establishment in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical Steam Engines; Tabular, Flue, and Cylindrical Boilers, Circular, Vertical, and Potable Saw Mills complete; Grist Mills, Car Building, &c. &c. Iron & Brass Castings of all descriptions, including ornamental railing, &c.

One of the Partners has been engaged in the above business for a number of years, and has turned out some of the best Engines and Saw Mills in the State, which can be testified to by many who have purchased of him.

We are also making preparation for the manufacturing of the most improved Plows, Harrows, Cultivators and other Farming Implements. All we ask is, that our friends will give us a fair trial, and see if they cannot thereby not only save their money at home, but a heavy tariff of transportation.

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,

PRINTER.

BOOKSELLER & STATIONER.

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dispatch at this office.

FARMER'S HALL,

RALEIGH, N. C.



The subscriber is general agent for the sale of Agricultural Implements and Farming utensils, Field seeds, Fertilizers, &c. &c. Almost all the articles brought to the late Fair were kept on sale and are offered at manufacturers prices with no cost of transportation, as they were brought free by the Railroad.

There is also a new fire proof Ware House on the lot, in which all articles on consignment are stored. The following are some of the articles brought to the late Fair: Horse Powers, Wheat Fans, Corn Drills, Field Rollers, Corn and Cob Crushers, Harrows, Cultivators and Plows of every size and description.

JAMES M. TOWLES.

Raleigh, March 1, 1855.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the Mole Plow; with vertical cutters near the edge of a horizontal share, for dividing the furrow slice, and a curved cutter on the rear of the share for turning the whole in towards the plow, or as far on the opposite side of the share as may be desired. Adapted to siding, listing, breaking turf or hard land, subsoiling, and many other purposes. Is light, cheap and strong; and supposed to be the most perfect pulverizer in use.

For license to sell, with directions for manufacturing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

WILLIAMS & HAYWOOD,

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,

Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous terms, and offer goods equally as low as they can be obtained from any similar establishment in this section.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satisfaction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular attention at all hours of the day and night.

1-tf.

THE Scientific American, TWELFTH YEAR. ONE THOUSAND DOLLAR CASH PRIZES.

THE Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

THE SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with several hundred original engravings.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

123 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence, half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good

and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Pears, Peaches, Plumbs, Apricots, Nectarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford county, N. C., or to Owen Lindley, Cane Creek, Chatham county, N. C.

JOSHUA LINDLEY.
OWEN LINDLEY.

Nov. 1, 1856.

2t.

At the meeting of the Granville County Agricultural Society, at Henderson, the following persons were elected officers for the ensuing year: Jno. Bullock was elected President for the current year, and Jas Turner, Hugh McCaden, T L Williams, S S Royster and Dr. Willis Sims, Vice Presidents. Col. W H Rowland was elected Secretary, and J J Wyche, Corresponding Secretary. Dr. G W Blacknall, P E A Jones and A C Harris were elected delegates to Raleigh; T J Wyche, Dr W Lewis and A C Harris to Norfolk; W A Eaton, R P Taylor and G J Reavis to Baltimore; J Gooch, Charles Sims and W A Eaton to Richmond; A R Burwell, L M Vanhook and Benj. Wyche to Petersburg.

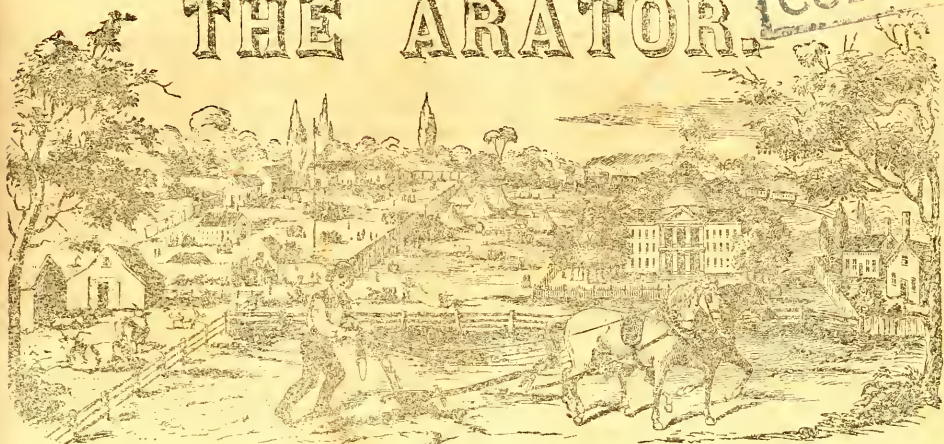
INDEX TO NOV. NO.

Sand for Clay Lands, 609; Clay for sandy land, 609; Report on wheat, 611; Deep Plowing, by Jack Hoe, 614; Tobacco, its culture and Management, 615; Proceedings N. C. State Ag. Society, 618; Progress in improvement, 621; Nobility and gentleness, 621; Be virtuous, 621; Jest and sneers, 621; List of Premiums of the Henderson Fair, 622; Tax Dogs to protect sheep, 624; Prices of Produce, 924; Thanksgiving day, appointment of 624; Grapes, Wine, 625, 626; Theory and Practice, Cotton Picker, Fair, 625; Ice House, Fair, 626; Texas, Frost, Fair, 627; Barley, Yopon, Chicken Raising 628; A sure way to Improve, 629.

PAYMENTS FOR THE ARATOR. Since Oct. No.
Beckwith, Dr. Jno. B. Smithfield, \$1,00
Carmichael, Peter, Laurinsburg, 1
Jacobs, Edmund, Jackson, 1
Gwatney, Lewis, 1
Lindley, Joshua, New Garden, 1
Do do adv. (rect'd), 2
Lewis, Ivey F., Falkland, 1
Pennell, W W Jr. Harrells' Store, 1
Robertson, W T Creachville, 1
Ivey, Rufus, Wake, 1
Bullock, John, Williamsboro', 1
Jones, Rufus, Morris' Depot, 75c
Knight, W. R. Raleigh, 1

THE ARATOR.

COLLECTOR



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II. RALEIGH, DECEMBER, 1856. NO IX.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, invariably in advance.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

For the Arator.

MR. EDITOR: Agreeably to promise, I now proceed to give you some examples of improvement within my own knowledge, and to show that our people will do better to hold on to their homesteads and improve them, than to sell and remove to another State.

1. My neighbor A., a very plain man, in moderate circumstances, blessed with good hard sense, also that important faculty called order, and that no less important habit styled industry, a few years ago purchased an old worn out farm, and set in with the right sort of resolution to improve it; and he succeeded beyond all expectation, by a very simple and cheap plan. His land, when he commenced, would not produce more than five bushels of corn to the acre.

His first step was, to ditch and under-drain his wet low lands, and hill-side

ditch and horizontalize his rolling fields. He had but two hands at first, to help him, except such as he hired to aid in ditching.

His next care was his stable, cow and hog pen manure. He kept his stables well supplied with straw, leaves and other trash, and when cleaned out, hauled it to a place in the field, where it was to be used, and mixed it, with alternate layers, at once, with rich woods mould or swamp mud, five or six loads to one of stable manure—leaving the heap thickly covered with earth and turf; always taking care to sprinkle his stables with salt and water or powdered charcoal, just before cleaning out, to prevent the escape of ammonia.—Thus he raised from three horses, a large amount of manure.

He took great pains with his cow-pens, always locating them on spots with a view to improve the places, and to make also manure to haul away.—He, therefore, kept the pen well littered from the jump, with leaves, straw and stalks, and woods mould. He regularly broke up the pen with a turning plow the last Saturday in every month, scraped up the manure in piles and hauled it out to the field, as he did the stable manure, mixing it in the

same way, except that he only put it up with muck or dirt, half and half.—He shifted his pens four times a year, always leaving the accumulations of the last month after turning under, to enrich the pen. In this way, with twelve or fifteen head of cattle, the first year, he made one acre of poor land occupied by the pens, very rich, besides taking away many loads of good manure to spread on other fields.

His hog-pens were littered in the same way, and cleaned out once a week: making from them, also, a large amount of manure. This manure he always puts on his land broadcast—wisely looking to permanent improvement, rather than to temporary results. He adopted a system of alternation, also, in cropping, as follows: First, corn; second, oats; third, wheat; fourth, rest or corn with a liberal supply of manure; manuring, indeed, every crop; fifth, cotton; and sixth, corn again. By this method, his land, in six years, was brought up from 5 to 30 bushels corn to the acre, and kept in a constant state of improvement, without costing him a cent in cash for fertilizers, except what he pays for the salt used in sprinkling his stables. NOTE.—Mr. A. is growing rich.

2. Mr. B. keeps up a small farm in a very productive condition, by resting his land every other year, giving every crop what manure he can make broadcast. His rotation is: 1st, Wheat; 2nd, rest; 3rd, cotton; 4th, rest; 5th, corn; 6th, rest; 7th, oats; 8th, rest.—His land was originally poor, but now never fails to yield highly remunerating crops, without having cost him the first red cent in cash for fertilizers.

3. Mr. M. keeps his land under constant cultivation, and at the same time in an improving condition. He turns under pea vines in the fall, and plants his corn, manured in the drill, early in the spring; and sows peas last plowing broadcast, to turn under in the fall with wheat. After the wheat is off, he sows peas to turn under again in the fall, which is followed the next year with oats or corn. He raises but little cotton which is confin-

ed to his cow lots. He has, in some instances, raised a clover sod for his corn in this way: the clover was sowed with oats in the spring: the next spring, about the last of April, it was turned under deep with a two horse plow; the corn was immediately planted, and then cultivated without disturbing the sod, and it would have done you good to behold the heavy crop of corn that was rolled out of that field in the fall.

4. Another, Mr. T., has made a large old field rich by covering it with dirt, leaves, and all sorts of trash from the woods. These materials were spread an inch or two thick, and remained undisturbed twelve months; when it was turned under, and the field put in corn. It rolled out five barrels to the acre.

5. And yet another, Mr. C., has raised his land from 400 lbs to bring 1000 lbs seed cotton to the acre by the use of compost manure, costing him nothing but a little extra industry and attention. NOTE—All are thriving in the world.

Now, sir, the farms of these men, being located in a healthy section of country, and convenient to market, as the lands in our State generally will be, are worth all of fifteen dollars per acre; and will, take a period of five years together, yield to the cultivator a greater clear profit than any equal number of farms, of equal value, with an equal number of hands, in any State South of Mason and Dixon's Line; clearly demonstrating that, as a matter of pecuniary calculation alone, our people will do better to hold on and improve, than to sell out and emigrate; and when we add to this, the immense advantages of health and pleasantness of climate; good water; nearness to the emporiums of commerce; good laws; good society; all the ties and endearments of kindred, old friends and all the undieing charms of our own, our native land, the arguments in favor of remaining are not only convincing, but overwhelming.

Now let us figure and cypher a little, to see how the matter will stand: We may estimate the cost of a removal, say,

to Arkansas, at 40 dollars per hand; and 80 dollars per head for white family. A family of ten grown negroes and ten children, would be,

For 10 grown negroes,	\$400
10 children,	200
4 Whites, to say nothing of children,	320
Expense of 1st year, for the family,	1200
Sacrifice in breaking up.	500
Difference in cost of Implementments and mules,	500
	<hr/>
	\$3120
" Loss of negroes in acclimating, 10 per cent.	1500
	<hr/>
	\$4620

Suppose, then, this sum were judiciously applied in improving our land: what would be the result? Assigning 25 acres per hand, it would give 460 to each field of 25 acres, which might be laid out as follows:

1st. Invest the principal, and apply the interest yearly in improving the land. Can any one doubt that \$277.20 thus judiciously laid out annually, would soon bring a sufficient quantity of land to a high state of fertility? Or, 2nd. Lay out the whole sum in improvement, thus:

1 ton guano, to be composted with mud, muck and woods mould,	\$60
60 days man and cart hauling and composting,	60
	<hr/>
	120
This multiplied by 4 years,	4
	<hr/>
	480
This multiplied by 10 hands, so as to apply it to 250 acres,	10
	<hr/>
	\$4800

This would give 48 loads of rich compost a year, for 4 years, 192 loads ultimately, to the acre; and who can doubt it would make any of our worn-out lands equal in fertility to the best in Arkansas?

But a cheaper system than this can

be successfully adopted. By carefully saving all of our animal manures, seizing upon every spare day for collecting materials at hand, scraping up everything that makes rich on the premises, by turning under green crops, and changing systematically the products of our fields, we can bring up our poor lands to produce, on an average, equal to any we can find elsewhere—giving us as clear gain, by remaining in North-Carolina, good markets, good roads, good water, good climate, good health, good government, good society, good increase, and finally a burial, in good old age, among our fathers.

Yours, &c. LITTLE FARMER.
Potato Diggins, Nov. 3, 1856.

HELP FOR CLAY LANDS.

To the Editor of the Arator.

DEAR SIR: One of your correspondents, in the November number, gave some useful hints on the application of sand to convert stiff clay into a pliable loam; and, for lasting results, I make no doubt this material should enter largely into every substance given to such lands for that purpose. But to ensure the further object of greatly increased fertility, other and more mutable substances should be added. I have known a garden spot which appeared to be composed of nothing but pure clay, brought into a very favorable and fertile condition by the application of a thick covering of light rich earth and oak leaves; a case is reported in which a clay soil was greatly meliorated by the addition of a coating of about two inches of well dried and pulverized muck; and trials have been made with signal success, with white oak saw dust. The dust was spread on the surface, two inches thick, and spaded in—in a part of the lot two spades deep. The same dressing was made, succeeded by the same mixing process, for two or three years, and with only moderate applications of stable manure.

OBSERVER.

If your soil is hungry, feed it.

CHINESE SUGAR CORN.

For the Arator.

Mr. Editor: I have read with very great interest the accounts which have been published of the results of trials in raising the Chinese Sugar Corn in various parts of the country. It appears to me this new product may become a valuable acquisition to the products of North Carolina; and I therefore take an early opportunity to call the attention of our agriculturists to the subject, in connexion with a hint, which, properly considered, may be of use to them—i. e. whatever is newly introduced, promising favorable results, let it be tried with prudence, fairly, and with moderate and reasonable expectations. Generally, in the introduction of something new, it is accompanied, through the agency of interested, and, often, unprincipled, speculators, with false and extravagant colorings, deceiving the public, and leading to high expectations, destined to certain disappointment and mortification, sometimes causing that which is valuable to be abandoned as a “miserable humbug,” just because it did not come up to the most unreasonable and silly calculations. This has been proved to be no humbug, however fallacious and visionary the expectations of some may be in regard to it. It has been ascertained to be rich in saccharine matter; but whether it will be profitable to raise it extensively for the manufacture of sugar and molasses, is a matter yet to be determined by future experiments. That it may be profitably raised, from Massachusetts to Georgia, as a forage crop, has been already proved beyond a reasonable doubt. It is bound to be a superior food for fattening purposes. In England, molasses are used in the feed given to fattening animals; and as the “constituent or elementary principles of sugar, starch, oil, and animal fat, are identical, and combined in nearly or quite the same relative proportions, the inference is, that the extra saccharine juice of the cane may be valuable food for fattening cattle,” hogs and horses; and two crops

of fodder may be raised from it a year. Let us try it. WAKE.

For the Arator.

GROUND-PEA RAISING.

Mr. Lennay: This is a matter, in looking about for new objects of industry and sources of wealth, evidently worthy the attention of the agricultural community. The ground pea is a valuable commodity, and, like all articles combining usefulness and luxury, is always in demand, bearing remunerating prices in the markets of the world. It may be raised in a large portion of North Carolina, I verily believe, with greater profit than any other crop. It is cultivated with as little labor as Indian corn, and land that will produce 20 bushels corn will bring 60 bushels of the pea to the acre—leaving the vines, for cow food, and the leavings of the butts to fatten hogs, to balance the corn fodder. It will flourish in all the sandy lands on and below the granite ridge girding the State, especially if lightly manured with a compost of well rotted dung, ashes and salt or urine. Now, mark the difference. An acre in corn produces 20 bushels, which, at 75 cents, brings \$15; an acre in cotton yields 200 lbs of lint, which, at 10 cents, brings \$20; an acre in the pea measures out 60 bushels merchantable peas, which, at \$1 per bushel, (it is rarely less and often more,) puts in your pocket \$50—more than three times the amount realized from corn, and nearly three that from cotton. Is it not worth a trial? In New Hampshire country, ground pea raising is a regular and profitable business. One farmer there, last year, I learn, made ten thousand bushels, which brought him the handsome sum of ten thousand dollars.

The mode of cultivation is simple and easy. Bed up the ground neatly, rows three feet apart, and harrow it fine; then open a small drill in the middle, and drop the seed about 2 feet apart, two in a place. When well up, chop out the grass, and in a week or ten days, plow, throwing the furrows close, and

pulverising the earth thoroughly. Keep up this process by about two subsequent plowings, leaving a light, soft bed for the vines to run on, until they cover the ground. Care must be taken not to tear up the young peas that have taken hold in the earth. After frost, dig, and stack the vines, with all that adhere to them, to cure. In speaking of planting, I omitted to say they should be covered about as deep as garden peas. The following from the Fayetteville Observer shows what can be done high up on the Cape-Fear:

MESSRS. E. J. HALE & SON:

Gentlemen; You have known for some-time past that the farmers on the Sound below Wilmington are growing rich by the cultivation of the Peanut, and that the Pea-Nut is thought not to grow well any where but on the Sound. I have been several times on the Sound, and saw the land, its soil and wild growth; and as I moved on the Cape Fear River last winter, our ridge land here seemed so much like the Sound land, soil and growth, that I thought, I would try and see if our ridge land would not produce the Pea-Nut: and suffer me to say, that in my judgment better Pea land is not in the State than we have on Cape Fear River in Cumberland county. They bear full and mature well, from the soil itself.—No better business can be done in this State by a farmer than raising Pea-Nuts, that is, for those who have the right kind of land. The nuts sell well and are fine for hogs, and their fodder is fine for stock. Many that will see this will be like Thomas; will not believe unless they see and feel with their hands. I will say to all such, you can see and feel if you will call on me at Cedar Creek, and taste also. Give me one more year and I shall not pay from 17 to 18 cts. for Bacon. J. C. BLOCKER.

Oct. 9, 1856.

In bringing this matter to the attention of the public, I desire to arouse our farmers to the importance of diversifying their crops as much as possible, and of giving every thing that promises

well a fair trial. Yours, &c.

TILLER TRYALL.

Nahunta; Nov. 14, 1856.

P. S. The old plan of covering the vines with dirt, is abandoned as useless and even injurious.

AMERICAN WINE.

It is about thirty-five years (says the South-Carolina Agriculturist) since Mr. Longworth began his experiments in grape culture and wine making, which he has followed up ever since. Every day of spring, summer and autumn, he labors five or six hours with his own hands, in setting, planting, pruning, training, gathering and pressing, with a view to develop valuable varieties. His money outlay in the same time has been so large, that many years of profitable business, (now it has become a success,) will be needed to make him whole in that respect.

The only grapes as yet successfully cultivated here for wine, are the Catawba and Isabella. The Harbomont is, however, rapidly coming forward as their rival, and one or two others give encouraging hopes to the experimental vine dresser. The Catawba is the staple wine as yet, however. In the Ohio valley, its annual product averages a half a million gallons of wine, worth, when new, about ninety cents per gallon. It is so remunerative, that its culture is rapidly extending. To make a vineyard, costs from two hundred to five hundred dollars per acre. One man can attend to five acres, besides raising food for his family. An average crop is worth \$200 per acre. Women and children are valuable aids in a vineyard, and with a strong wife and industrious progeny, several more acres may be added.

Of the 500,000 gallons of wine made in the neighborhood of Cincinnati, about forty thousand gallons will this year be made into Sparkling Wine, and the rest drank mostly by the people of the city and a few surrounding places, in its simple pure state. That so large a quantity finds so ready a sale on the

very spot of its production, is sufficient proof that the American people can be relied on for taking to wine as readily and kindly as young ducks take to water; and that the cheapness of whiskey will not preserve its supremacy, when its competing drink is sufficiently abundant.

The Catawba, as drank, here, is not very attractive to the palate accustomed to brandied and sweetened wines from Europe, such as are most in vogue; but the taste for it once acquired, holds on for life. Besides being an antidote for intemperance it is the mortal foe to gout, rheumatism, stone and gravel, as both theory and experience have shown; and it is also found to be consistent with a good many other ailments.

When Mr. Longworth discovered, by accident, that the Catawba would make a good sparkling wine, (like Champagne, Sparkling Hock and other kinds,) he commenced preparing it in the mode followed to produce those wines, and has since pushed the business as fast as possible. Sparkling Catawba having brilliant merits, has easily made its way to the consumers in all parts of the country, and by its immediately attractive sweetness and flavor, and by its noisy and frothy manifestations, has greatly helped to introduce its more sterling and staple, though at first tasteless, lovely brother, the Still Catawba. Years hence the sparkling wine of the tables of the rich, and the occasional regalement of all, will doubtless be produced largely, and its annual production counted by its hundreds of millions of gallons, as in France is now the case with Claret, Burgundy, Sauterns, etc.

The Wine Houses of Mr. Longworth, three in number, are, and have been for the last years, under the charge of his Director, Mr. Fournier, an accomplished wine chemist, of Rheims, in Champagne, France, who receives a large salary. The method of preparation is thus:

In the spring following the pressing of the grapes, the wine, which has mean-

while undergone the various fermentation, by which ten or eleven per cent, of alcohol is developed, is mixed with a small quantity of sugar and put into strong bottles, with the corks well fastened by twine and wire. The sugar accelerates second fermentation, which always takes place about this time, and thus a strong movement is produced inside the glass, which generates gas enough to burst the vessels briskly, adding thereby considerably to the cost. This is called the gaseous fermentation, and it renders the drink more exhilarating, more prickling on the tongue, and more fruity. This last effect results from this, that the flavor of the fruit mostly passes off with the carbonic acid gas which is largely generated in the first or vinous fermentation, and in a less degree in this second or gaseous fermentation. The loss of flavor from the first fermentation cannot be avoided; but by means of strong bottles and well-tied corks, it can be saved in the second.

At the end of about a year, the liquid has become clear, and a sediment has been deposited. To get rid of this sediment, the bottles are placed in racks made to fit their necks and shoulders, inclined, with corks downward, and well shaken daily for several weeks, which process works the sediment done against the cork. The wires and twine are then cut, and the gas, exploding, blows it off. Then more sugar, for sweetness, is added, a new cork is driven in and fastened, and in a few weeks the article is ready for consumption.

The quantity bottled by Mr. Longworth, this season, is one hundred and fifty thousand bottles, and with that added to his previous stock, he has now in cellar full three hundred thousand bottles, mostly quarts, of which twenty thousand are of Isabella. The demand rapidly increases.

Wanted to know—what is the best remedy against rust in wheat? Also what is the best method of enriching old worn-out fields?

For the Arator.

Let North-Carolina Shoe Herself.

Mr. Editor: Allow me to express, through your paper, a few thoughts of vital interest to the State. In your first number, you demonstrated, by figures, that North Carolina pays to Massachusetts alone, annually, at least two millions of dollars for shoes; all of which might be manufactured in the State, with a handsome profit, to go into the hands of all engaged in the business, and to increase the wealth and swell the industrious population and permanent revenue of the State. I have waited with great anxiety, to see if some of our patriotic capitalists would not respond to your call to get up a large establishment at the seat of government—being a central point—to supply our people with home made shoes and boots of every quality, and especially Brogans. As this would require a larger capital than any individual would, perhaps, be able to invest, it was very properly recommended that it be raised by a company. Seventy-five to a hundred thousand dollars would propably do to begin with, and might safely be invested, with the certainty, under proper management, of a return of twenty-five per cent. per annum. This would be more productive than any bank or other stock investment; it would increase the population of the town, create a demand for houses, enhance the value of real estate in town and country—I say country also: for in proportion as the population of a town increases, will be the demand for country produce, and the increase in the value of land. I candidly believe the owners of real estate in the city and county might lay out the amount necessary to erect and keep in operation such an establishment, and make money by the operation, if six per cent were its maximum profits, in the enhanced value it would give to their real estate. Why, then, as mere matter of pecuniary interest, do not our capitalists take hold of this great enterprise? They may rest assured there is money in it. But there are other considerations

of a higher and less sordid character, which strongly appeal to our pride and patriotism. Massachusetts—in her political, religious and agricultural journals—in all her proceedings—so derides our peculiar institution, that we cannot, without dishonor, longer remain dependent upon her for our supplies; nor can we continue to offer her the money earned by slaves for her wares, since she has most conscientiously set herself to work to find the means of being no longer dependent on slave labor for her sugar, coffee, &c.!! without knowingly and wilfully wounding and insulting her honor. Now is the time to enter upon this important work. Our railroads are ready to convey the work to every section of the State and to markets where it may compete with that of Massachusetts; and we have a Tannery now established in the city, (by Messrs. Harrison & Co.), which is turning out as good leather as can be manufactured in Yankeedom or any where else, which can supply the material to be worked up; Messrs. Burns & Co. can make all needful machinery; the thread can be manufactured in the State; the wax is at the door; and all—all can be done in the State.

Other branches of manufacture, less certain and remunerative, I am proud to say, have been introduced and are flourishing among us. Our cotton factories are competing, in the markets of the world, with those of Northern manufacture, and, after taking the circuit of New York, come back and are sold to us at a profit; and the woollen cloths made at the Factory of Young & Grier, Charlotte, are in great demand abroad, are carried to Alabama and even as far as Texas, and are eagerly sought and purchased in the markets of those States. There is a steady and always will be an increasing demand for Shoes—the manufacture of shoes always has been and always will be a profitable business. See what it has done for Massachusetts. I need only say to the wise, all that is necessary to success is, *savoir le pour et le contre de l'affaire*. Let them, then, sa-

tisfy themselves of this, as well as of the duty they owe the State, and then get up a company, which will enter upon the business—

CON AMORE.

For the Arator.

Value of Sheep to the Farmer.

I am glad, Mr. Editor, that you have called the attention of the Legislature to the importance of taxing dogs for the protection of sheep. This would be a very wise and wholesome measure; for it would operate directly for the benefit of the whole people, and incidentally become an important source of revenue. [In the days of my boyhood, I well remember, almost every farmer had his little flock of sheep; now but few attempt to raise them at all! Why was this valuable branch of husbandry abandoned? Simply because of the multiplication of dogs, by which the sheep were destroyed, until it became too vexatious and losing a business to be endured. Thus do the dogs rob the farmers of North-Carolina of Millions of money every year. I hope the present Legislature will not adjourn without laying a tax of three dollars on every extra dog over one kept by a family. It has been truly remarked that "it is of more importance to the farmer than is generally supposed, that a certain proportion of his farm stock should consist of sheep. Speaking on this point, R. S. Fay, of Lynn, recently remarked at an Agricultural meeting in Boston (as reported in the N. E. Farmer), "Sheep are gleaners after other stock, and will help keep the cattle pastures in good condition, by being turned into them occasionally, to eat the coarser plants which have been left. They will enrich the land. There is no manure so fertilizing as that of sheep, and it does not so readily waste by exposure as that of other animals. Sheep may be made exceedingly useful in helping to prepare land for a crop. A German agriculturist has calculated that the droppings from one thousand sheep during a single night would manure an a-

cre sufficiently. By that rule a farmer may determine how long to keep any given number of sheep on a particular piece of land. Mr. Fay said he was accustomed to fold his sheep upon land which he designed for corn and other crops: and in so doing he shut them upon half an acre at a time, keeping them there by a wire fence, which was easily moved from place to place. In this way the land was well manured without the labor of shoveling and carting. These ideas are worth reading by the farmer. We believe any farm will bear a certain number of sheep, in proportion to the other stock, not only without loss to the amount of grazing which it will yield to the cattle and horses, but to the increase of the same. Mr. Fay, by his management, makes the lambs and manure pay for keeping the sheep, and the wool is clear profit.

Here is matter for the serious consideration and action of our people and of our Legislature. Will they not take it in hand?

TIM TUG.

For the Arator.

Manure for Fruit Trees.—Many plant their trees, and leave them, as they do their corn, to thrive or not in a poor and wornout soil. The result is poor fruit and little of it. He that would be paid by his orchard, must nurse it; and as there are some who desire to do so, but are at a loss as to the best kind of manure to be used, I will, by leave, cheerfully state what I know to be good. Stable manure should not be used when fresh, and it does not answer well when partially decayed, alone. Different ingredients are necessary for different sorts of trees. Hence the necessity of composts, of which swamp muck or leaf mould (found in deep hollows) should form the basis; or, near the coast, the marsh mud and peaty matter (of which there is great abundance) the remains of decaying marsh grass, will answer. These materials should be composted by alternate layers of six inches of mud or mould, 2 or 3 inches decaying stable manure, then six inches more of

mud, then an inch of ashes or fresh salt water slaked lime, then comes the mud again—thus carry on the heap to any size desired. After letting it lie 4 or 5 weeks, it should be carefully turned and mixed. This is first rate for Apples, (and, by-the-bye, for Corn too), adding a bushel of lime to each cart load, if ashes alone were originally used. For Pear Trees, a bushel of broken bones and a bushel more of ashes should be given to each cart load. For Plumbs and Peaches add a peck of salt and two bushels of powdered charcoal to each load, with some clay soil, if the land be light and sandy. For Nectarines and Cherries, the same, with a double quantity of the ashes. For the Grape and Fig, the same, with half a bushel of plaster and double quantity of crushed bones. Cotton seed composted forms an excellent manure for the orchard as well as the field; as also do fish or any dead animals and the seaweed. Yours, &c. S. B.

TURNING UNDER GREEN CROPS.

Peas were sown at the laying by of corn, a row on each side of a corn row, say four to four and a half feet apart. The corn being now gathered, a heavy roller is passed over the corn stalks and pea vines, and the plow, drawn by three mules abreast, follows. To the plow is attached a cutting knife, being a piece of old cross-cut saw blade, rivited to an iron bar attached to the beam near the clevis. The knife extending downwards and backwards towards, and a little outside, the land side of the share point. This cuts the vines, and renders it much easier to turn them under. The vines are covered to the depth of 6 to 8 and 10 inches. I never saw a cutter similarly attached elsewhere, and believe it originated in this Bayou. It would answer well for clover. [La. paper.]

To cure scratches, wash twice a day in strong coperas water, and keep coperas, in a little bag, bound round the part affected.

PREMIUMS

Awarded at the late N. C. State Fair.

HORSES.—For second best stallion, 5 years old, thorough bred, "Seession, Josiah Turner, fifteen dols. Best brood mare, 4 years, thorough bred, "Laura," R A Hamilton, twenty dols. Second do do "Priam" Paul C Cameron, ten dols. Best brood mare & colt, thorough bred, 'Anna Chae,' J Turner, twenty dols. Best filly 4 years, t. b. Thomas J. Faison, ten dollars. The committee commended highly and recommended premiums, for the Morgans of Drs. Moore and Strudwick, 20 dollars each; and for the sorrel mare of the latter ten dols. Best single harness horse, Jenny Lind, Dr. W S Strudwick, twenty dollars. Best do raised in the State, Peacock, Dr. G. W. Blacknall, 20 dols. 2nd do do do Jim, W M Barford, fifteen. Best saddle horse, John Wimbush, twenty. 2nd best do Aleck, J P Turner, fifteen. Best pair of matched carriage hores, Mrs. Thos. Bragg, twenty-five dols. Best do do do, raised in the State, E D McNair, twenty-five. Second best do do do, J C Branson, twenty. For road and farm work: best stallion six years old, Blacksman, J M Morgan, 25 dols. Best stallion colt, two years, Telegraph, T M Lloyd, fifteen. Best do do 1 year, T F Bailey, ten. Best brood mare, over four, Nelly, S O'Bryan, fifteen. Best filly, E Donnell, ten. David Cheek offered second best stallion under two, but no premium was offered.

JACKS, &c.—Best imported Jennett, 4 years old, B R Ward, fifteen dollars. Best imported Jack, E H Ward and Wm Russell, to be divided, twenty five. Best Jack raised in the State, W R Russell, twenty-five. Best Jennett, do do, B R Ward, fifteen. Best pair of mules, six years old, raised in the State, W Whitaker, twenty-five. Best single mule, three years old, raised in the State, W M Thomas, ten. The committee recommend a premium for a mule colt belonging to Jacob Mordecai.

CATTLE. Durhams: Best bull calf, Albert, Crouse & Irvine, Lynchburg, Va. ten dollars; best cow, Mollie, 9 years old, ditto, twenty; second best cow, L Springs, fifteen; best cow under 3, Crouse & Irvine, fifteen; best heifer calf, do, ten. Devons: Best bull over three, Lord Baltimore, W W Caraway, twenty five dollars; second best bull, Dr. John F Foard, twenty; best bull over 2 and under 3, Nat. Jones, twenty; best bull over one and under two, Springs 15; best bull calf, Walter Guynn, ten; best cow, over three, ditto, twenty; second best cow do do, Crouse & Irvine, fifteen; best heifer calf, Sylvester Smith, ten; best cow over two and under three, L Spriggs, fifteen.

Grades or mixed blood and native Cattle: Best bull over three years old, Granville, S. H. Dunn, twenty dollars; best bull under three, S Smith, 15; best cow under three, E Hall, twelve. Wm. Russell's cattle were recommended to the attention of the Ex. Com. by whom he was awarded ten dols. Best pair working oxen, R Crawford, twenty dols. 2d best do do H Franklin, ten. Best fat cow, Crouse & Irvine, seven; best milch cow, do do, fifteen; 2d best do, Leroy Springs, ten.

SHEEP. Best full blooded Cotswold buck, J W

Norwood, twenty dollars; best pen of three South-down Ewes, Dr. Wm. R Holt 15. The fine mixed bloods of Dr. Holt and Seth Jones, were recommended to the favorable consideration of the Ex. Com., the judges having no authority to award premiums for that description.

GOATS. Best pair of pure Cashmere Goats, R. Peters, Georgia, fifteen dollars; best common Goat, R Crawford, three.

SWINE. Best breeding sow, over one year old, large breed, S. Smith, ten dollars; best lot of pigs under six months old, large breed, ditto, six dols. best boar over one, small breed, E Hall, fifteen; best breeding sow over one, small breed, W W Whitaker, ten; best boar over two, native, do, fifteen; best breeding sow and 6 pigs, native, do, fifteen; ten dollars recommended to Mr Cuthrell for a fine pair of pigs, cross on Nebone and Woburn.

Agricultural Productions: Best variety of bread corn, John Hutchins, three dollars; do stock corn, S H Dunn, three; do wheat, do three; do oats, E Hall, three; do field peas, S H Dunn, three; do cotton, N Price, five; Greatest variety prod. raised on one farm, S H Dunn, ten; best specimen of leaf tobacco, John W Barnes, three; the judges recommended three dollars to John Hutchins for white rice beans and five to Jacob Mordecai for specimens of peas and beans.

TOBACCO. Best manufactured tobacco, Y & E P Jones, ten dollars; best box of segars, Dr. N Joyner, five dollars.

SALT PROVISIONS. One dozen bacon hams, N Price, ten dollars; eight hams exhibited by Hanson Johnson, cured without smoke, and one old ham by Mrs. Tucker, are favorably noticed.

Dairy. Best sample fresh butter, Miss Julia A Holt, ten dollars; second best do W B Williams, five.

Cabinet Work. Mahogany rocking chair, H J Brown, three dollars; bureau, Thomas Carter, 5; cabinet, do 5. The judges admire the pine used in various articles exhibited by Sion H Rogers.

Fruit and Fruit Trees. Best and greatest variety of apple trees, Thomas Lindley, ten dollars; best and greatest variety of pear trees, do, ten; best and greatest variety of peach trees, Westbrook & Co., ten; largest and best variety of apples, do, ten; do pears, do ten; do peaches, Wm. A Eaton, ten. The judges found difficulty in deciding between Westbrook & Co. and Lindley & Co. The fruit of the latter was much injured by the storm; but even with that drawback, they were for a time in doubt as to their final judgment. Both are warmly commended for their great skill and knowledge. Both parties are recommended to the patronage of the Society and the public, and a diploma to Lindley & Co. for their exhibition of apples. High praise is bestowed upon Mr. McKimmon for quinces, Mrs. Rufin Tucker for pomegranates and filberts, and Mrs. Strange for lemons, exhibited by them, and a diploma to Mrs. A H Shepherd for a box of preserved dried peaches.

Vegetables. Six best cabbages, Wilson W. Whitaker, two dollars; best egg plants, Mrs. T P

Devereux, two; best onions, E Hall, 2; do pumpkins, do 2; do sugar beets, Joseph Sniall, 2; do turnips, G Banks, 2; do sweet potatoes, J G Du Pre, 2. A large beet by Dr. Montgomery, cabbages by Mrs. Roullac, best and largest variety of vegetables by Mrs. M. H Brown, and vegetables contributed by Mrs. Dr R S Mason, Mrs. McKimmon, Mrs. T P Devereux and Mrs. G T Cooke, are all favorably noticed.

PLOWS. Best hill side plow, E Whitman & Co. Baltimore, ten dollars; best double mould board plow, R Sinclair & Co., Baltimore, ten; best two horse plow, Borum & McLane, Norfolk, ten; best two horse plow manufactured in the State, W B Williams, ten; best wrought plow manufactured in the State, D F Cuthrell, ten; best subsoil plow, E Whitman & Co. ten; best do manufactured in the State, W B Williams, ten; best toothed cultivator, R Sinclair, jr. & Co. five; best do manufactured in the State, W B Williams, five; best harrow, Borum & McLane, five; best do manufactured in the State, S B Williams, five; best horse rake, E Whitman & Co., five; best iron roller, smooth, E Whitman & Co. five; roller for crushing clods, E Whitman & Co. five; best and greatest variety of agricultural implements manufactured in the State, W B Williams, twenty-five. A lot of plows by Wainwright, Vanhook & Co. and a cotton planter by Horn & Stanton, are favorably noticed.

Farm Vehicles. Best two horse wagon, W J M Thomas, ten dollars; best dumping cart, H Horton, five; best wheel barrow, E Whitman & Co. 2.

Pleasure Carriages. Top barouche, A M Gorman, fifteen dollars; hickory buggy, J Bashford, fifteen, painted buggy, 2d pr. B Perkinson, ten; model of a sulky, — Richardson, five; improvement in buggy brake and swingletree, D F Leake, five; improved adjustable carriage coupling, E R Crabtree, five.

Horse Power. Best sweep horse power, E Whitman & Co. twenty dollars; best railway do, ditto, twenty; do grist mill, R Sinclair & Co. 20; do broadcasting and drilling machine, E Whitman & Co. fifteen; do do do for guano &c. ditto, fifteen; do cotton gin, J H Carlisle, twenty; do reaping and mowing machines and hay and cotton press, E Whitman & Co. twenty, each; do smut machine, E Whitman & Co. ten; do threshing machine, — Davis, twenty; do portable saw mill, Tappey & Lumsden, twenty; do corn and cob crusher, E Whitman & Co. ten.

Mill Fabrics. Best piece of sheeting, J. Newlan & Son, ten dollars; best 8 bunches of cotton yarn, Newlan & Son, ten; 3 coils cotton rope, do, five; one piece black cassimere, Young & Grier, fifteen; best piece of Flannel and best piece of Jeans, Young and Grier, ten, each.

Food, Condiments, &c. Best specimen of wheat flour, J H Rogers ten dollars; 2nd best do, N Price, five; best do of corn meal, E Hall, five; do do rye flour, R L Patterson, five; do do starch, N Price, three; do wheat bread, D H Dickerson, three; do honey strained, S. Smith, three; do do in the comb, Mrs J C Partridge, three; best domestic wine, Catawba, D M Lewis, five; best and greatest

variety of domestic wines, D M Lewis, ten; best rose and currant wines, J. Ayres, five; best and greatest variety, do, ten; best sparkling Catawba wine, do, Isabella do, N Longworth, five, each; do apple brandy 47 years old, J Tisdale, Nash, five; best sweet peach pickles, Mrs. W H Jones, three; best oil mangoes, yellow cabbages and brocoli pickles, Mrs. J Ayres, three; best Martina pickle, and best domestic sauce, Mrs. Littlejohn, Franklin, three, each; best crackers, R Patterson, five.

Sundries. Best specimen of ambrotypes et cetera, Havens and Mallon, ten; box of shaving soap, Mrs J M Barnes, three; thirty pounds washing soap, Mrs J M Barnes, three; box of specimens of soils and marls, Prof. Drysdale, fifteen; best specimen of printing, W D Cooke, five; best specimen of candles, Mrs. J C Partridge, five; lot of bar soap, Costin & Gifford, three; best lot of wagon harness J Jones, five; 3 fine Spanish saddles, C W D. Hutchings, ten; best carriage harness, C W D. Hutchings, fifteen; lot of fine brogan shoes, J Ramsour, three; harness leather, kipskins, calf skins, goat skins, J. Ramsour, five, each; 5 rifles, A C Ledbetter, five; lot of sole leather, M Tomlinson, five; best case of boots and shoes, H Porter, three. The judges reported Cooke's new Map of North Carolina was worthy of special notice; upon which said map was submitted by the Ex. Com. to the examination of Prof. Emmons, who commends it highly, and pronounces it to be "the only map which can be relied upon for accuracy in its details."

Needle Work. Best silk embroidery, vest, Mrs. Dr. Dodson, six dollars; 2d best silk embroidery, child's sacque, Mrs. Ruffin Williams, four; do do on silk, Miss A Grimes 4; infant's cap, Mrs. J B C Roulhac, four; collar and under sleeves, Guipure work, Mrs M Lucas, six; morning dress, English embroidery, Miss Bledsoe, three; infant's dress, English embroidery, Mrs Johnson 2; skirts, do do Mrs Jeremiah Nixon, two; feather work, talma, tippet and fans, Mrs. J C Partridge, six; Child's dress, socks and edging, Miss Rebecca Trull, a blind pupil in the N C Asylum for the Deaf and Blind, made entirely by her, six; specimens of sewing, by Mary Trull, Mary Burt and Nareissa Du Pre, blind pupils in ditto, six; fancy parlour chairs, Mrs E Taylor, three; chairs embroidered, Miss F Kerr, two; specimen of sea moss, arranged, Miss E Coleburn, two; potichomania, Miss Nash, three; 3 crocheted collars, Miss Maria E Cooke, six; chenille work, Miss Gallagher, three; raised worsted work, ditto, three; ottoman cover, Miss Laura Phillips, three; do Miss Bettie Harris, two; wax flowers, Miss E A Hollister, three; tapestry work, Mrs. A Ramsour, six; 1 shirt, Miss A C Peebles, 9 years old, three; infants' cloak, Miss Ashe, deserves honorable mention; silk stockings, Mrs James Ayres, three; hair wreath, Miss Laura Murphy, three; hair bracelet, Miss Lucy Foster, two.

Household Fabrics. Silk bed quilt, Mrs. G W Mordecai, five dollars; 1 silk bed quilt, Miss Sophia C. Hunter, 2d premium, diploma; two bed blankets, Miss R Brughton, 1st prem. five; 1 bed blanket, Mrs. C A Webster, 2d prem. diploma;

domestic carpeting, Mrs F B Fields, 1st, ten; do do, Mrs Rosa A Lewis, 2d, five; pair net blankets, Miss Mary E Hunter, 1st, five; knit curtains, Mrs Ruffin Tucker, 1st, five; 1 knit counterpane, Mrs Eliza L Taylor, five; 1 white counterpane, Mrs M L Jones, diploma; counterpanes, Mrs J B Johns, diploma; 1 bed quilt, Mrs. M G Burrows, five; 1 patch work quilt, Mrs J R Williams, dip.; 1 bed quilt, Mrs John Y Jones, diploma; 1 piece fusian, Mrs. J M Barnes, diploma; silk patch work piano cover, Mrs E A Harris, three; worsted stocking, miss Hattie L Cooke, two.

Hand Power. The judges recommend premiums on the following improvements: Best corn-sheller, \$8, best corn and seed drill \$5, best turnip drill \$3, best iron brace grain cradle five dollars, R Sinclair and Co.; best wheat fan, J Montgomery, eight; best sausage meat cutter, E Whitman and Co. three; also by the same, best grass sheaths three, best vegetable cutter, five; best American straw cutter, eight; Alex Dickenson, best washing machine, five; by Eorum and McLane, the following: best double corn sheller, eight dols. best potato digger, two; best wooden hay forks, 2.

Poultry. Best pair Shanghais, Charles Busbee, three dollars; best pair Polands, Master Roulhac, three; best pair of Brahmas, R B Anderson, 3; best pair of game, J J Williamson, three; best pr. wild Indian game, H M Miller, three; best pair of Sumatra game, J M Crenshaw, three; best pair of stone fence game, J J Williamson, three; best pr of dominica game, H M Lean, three; best pair turkeys, E Hall, three; best pair Canada Geese, A F Davidson, three; best Moscow ducks, H Mordecai, three; best pair common ducks, W F Colling, 3; best and largest exhibition of Poultry, E Harris, ten.

Works of Art, Taste, Painting, &c. The judges notice four oil paintings executed by Mrs R M Saunders, and recommend for them the first or highest premium; they recommend for the paintings of Mrs Ramsour the second premium; honorable mention is made of a portrait painting by Mrs. Anna Busbee; the judges also mention as deserving notice and praise one Grecian. Painting, exhibited by Mr Christian, from the Raleigh Methodist Female Seminary, one oil painting by Miss C A Blake, several crayon drawings by Miss R M Dewey, ditto ditto by Miss Anna Hollister, two do by Mr Christian, and a lot of ambrotypes by messrs Havens and Mallon, and of colored daguerreotypes by Mr Copeland.

Agricultural Essays. But one essay was presented, and that is warmly eulogised by the judges, and the author, John H Bryan, jr., Esq. takes the premium, ten dollars.

Speed of Horses. J H Neal, S Hays, Dr G N Moore, W Alston and R Tucker each entered a single horse on the first trial. Two heats of 1 mile and a quarter: premium of twenty five dollars awarded to Mr Neal's horse, John H ne ck, fastest.

Second trial, Mr S G Hays' horse Bob, beat the horses of J Newsom, Dr G W Moore, and W H Wheeler, and took the premium of five dollars.

Read your agricultural papers attentively.

ANNUAL ADDRESS

Delivered before the N. C. Agricultural Society, at the Fair held at Raleigh, October, 1856, by Prof. E. MITCHELL, of the University.

Three weeks ago last Tuesday, I was honored with a communication from the Committee of the Agricultural Society of North Carolina, in relation to the duty I now discharge. A gentleman *had been* selected for the performance of it, in all respects qualified—one who would have offered for your acceptance the counsels of a wisdom, in which the operations of a mind richly endowed by nature, would appear, combined with the fruits and results of earnest study, mature reflection, and a very sufficient experience. But it having been ascertained that this excellent gentleman would be called away and detained elsewhere by circumstances, at the time beyond his control, it became necessary to find a person who, on the spur of the moment, would provide something that would pass muster at this anniversary. The Committee did me the honor of taking it for granted that if I could not, on so short a notice, prepare an address suited to the importance of the subject and the dignity of the occasion, I might, at any rate, make believe to do so, as well as some other people. Three weeks and two days were, I acknowledge, ample time for the task assigned, if one had nothing else to do. But we are overrunning with students at the University, and have abundant occupation in the discharge of our duties there, not only every day, but all day, which, of course, alters materially the condition of things. So much of apology seems to me appropriate in the way of deprecating too severe and searching a criticism, in case that in regard to the matter or the execution of what I have now to offer, I shall be judged to have made some *approach* only to a decent respectability.

But a more weighty objection to the speaker, in the capacity in which he now appears, may be found in his manner of life, and what constitutes his employment from one year's end to another. He is nothing but a monk, it may be said, (a married one, by the way,) who is kept perpetually cloistered up there at the University, engaged in communicating to the young men the rudiments of science. What can he know about the operations of farming, the cultivation of the ground, or the raising of cattle?

What is here, as we may suppose, offered as an objection to me, constitutes, in my judgment, my very highest recommendation. It were a good thing for people of all occupations, professions^s

and conditions in society, of each sex and every age, to have now and then from some authentic source, a statement of the opinions entertained respecting themselves and their modes of proceeding, by such as are the farthest possible removed from them in their social position and pursuits. It would be very amusing at least, and might be useful sometimes, for lawyers, preachers, shoemakers, farmers, doctors, merchants, and others, to listen to the talks their neighbors have about them.

If somebody would only come over to our side of the house, and disclose the communications the sex have with each other about the men, when their heads are brought into closest proximity, and the sweet, low tones of their voices only are heard, but the words they utter are undistinguishable; or if the women could hear the frank and undisguised opinions of the men about themselves, when these same men speak out fearlessly to one another, instead of humbly talking blarney at the feet of a wife or a lady love, it might result in a mutual benefit.

One of the happiest in conception, as well as successful in execution, of the productions of the poet Burns, is the *Twa Dogs*; where he introduces two individuals of the canine race, both apparently of fair character in their respective spheres, but occupying very different positions in society—one a polished gentleman, and the other a plain, unpretending peasant, as, interchanging opinions about the characters and conduct of mankind, when

"Upon a knowe they sat them down,
And there began a long digression
About the lords o' the creation."

I never saw two wagon horses of a Sunday or other day, when they may happen to be at leisure, standing together and thinking to each other for hours, without being desirous to know what ideas may be passing through the mind of each. If I could get hold of a hog newspaper, in which there was a communication from one who had been lately put up to fatten, expressing his opinions on matters and things in general, I should peruse his article with extreme interest. He would probably state that the character of the human race seemed to have changed greatly of late, and for the better. For that, whereas a few weeks ago his venerable and venerated mother; a sow somewhat aged, with a large family about her, could never crawl, when half famished, through an opening in the fence around a cornfield and help herself to a breakfast, without being cursed, driven rudely out, pelted with stones, beaten with a club, and her

ears cruelly mangled and torn by ferocious dogs; here he, the writer, was in a comfortable yard or pen, with corn or other savory food always lying by him, a plenty of water supplied, a pleasant sleeping place at night, so that it was not his practice now to root any more except for exercise and his own amusement. He had doubts, indeed, about where all this considerate kindness would end; but for the present he was comfortable and very happy.

Now, upon the principles here laid down, I can very well conceive that the farmers of North Carolina may be willing to know what a body of men so excessively learned as are the Faculty of the University, think about their operations and upon farming in general. I assure you they entertain opinions upon these subjects (some of them) which are quite peculiar. Some of these I have taken the trouble to set down; which, however, as Mark Anthony says in the play, "which, pardon me, I do not mean to read." I stand here, then, as the unworthy representative of the University, in the presence of the farmers and planters of the State, to discourse to *them* about their own peculiar business, and to offer them counsel in relation to matters which they understand so much better than I can pretend to.

In navigating a vessel across the ocean, there are several particulars to be attended to. Not only are the sails to be trimmed and set in such a manner as to catch the breeze, the helm to be managed with skill, the course by the compass to be noted and the log to be thrown at intervals so as to ascertain the progress the good ship is making, but from the record of observation so obtained, the position of the mariner on any particular day and at any hour, is to be calculated, so that it may be known whether he is drawing near to the desired haven or approaching a dangerous coast. I propose to examine and ascertain, as accurately as I can, whereabouts we are in the great ocean of agricultural improvement and knowledge; especially that part of our knowledge which is most intimately connected with the science of chemistry. To do this it will be necessary to look pretty far back, as well as immediately about us. If any art or science is warranted in tracing its history to the very cradle of the human race, I suppose this to be eminently true of farming, inasmuch as we have it from the very best of all authorities, that the father of the human race was put into the garden of Eden, to dress it and to keep it. Of the agriculture of this garden, I do not propose to treat at present, though I may find occasion to

speak of it hereafter. I come down, then, at a single stride, from that remote era and unknown locality on the earth's surface to the most ancient seat of civilization and the arts; to Egypt and what is most worthy of attention in the condition and modes of culture in that country.

It seldom rains in Egypt, which, so far as the growth of vegetables is concerned, is dependent altogether upon the waters of the Nile. The habitable and cultivable part of that country, if not confined absolutely to the low grounds of that stream, extends but a very short distance beyond them. Once in a year, somewhere between the middle and end of June, the river begins to swell from the effect of rains which have fallen, we do not know how long before, in the interior of the continent of Africa. The quantity of the water flowing in it goes on increasing very slowly for about two months, at the end of which time the channel of the Nile is brimfull and begins to come over the banks and cover the lowgrounds. A month later it is at its highest point, and a month later still, or at the end of October or beginning of November has returned to its channel again, leaving the soil, after having been flooded for two whole months, most thoroughly wet and impregnated also with whatever elements of fertility the river has brought from the regions of its remote fountain head. The ground now receives what little breaking up it requires, and the wheat, which is by far the most important crop, is sown. As the atmosphere of that country is always dry, at least as compared with that overhanging the other portions of the earth's surface, (an effect probably of the deserts that border Egypt on either hand,) the climate is favorable to the health and vigor of this particular grain. It is very little subject to blast, or rust, or mildew, or to any other of those casualties which sometimes blight the hopes of the farmer in our own country. The agriculture of Egypt was therefore mainly, if not altogether mechanical, the overflowing of the Nile supplying annually the elements of perennial fertility.

Palestine or the Holy Land, the theatre of so many miraculous events, recorded in the scriptures, was a very different sort of country. With some plains of moderate extent, the greater part of the surface is rolling or broken. The rock that underlies the soil is limestone. Here, as in Egypt, the kind of culture to which the population are in a great measure, if not altogether restricted, is determined by causes beyond human control. During four months and a half of the year—the three summer months, September and the first half of

October—rain very seldom falls there. The rains commence in the latter part of October and continue through the winter and spring. It follows that the rotation of crops must always have been imperfect in that country. Our common Indian corn, even if known, could never have been cultivated to advantage in Palestine. Wheat was, and is, as in Egypt, the principal grain. The soil has always been, and is now, favorable to its growth and productiveness; so that, with an imperfect cultivation, the returns are good. It does not appear that the Hebrews were ever remarkable for their skill in farming. That they made some use of manure in the time of our Saviour, appears from the parable of the barren fig tree, which the dresser of the vineyard requests to have spared, till he shall have had an opportunity to dig about it and *dung* it; after which, if it shall still continue unproductive, he consents that it shall be cut down. The means of improvement used by them, appear to have been mostly mechanical; the loosening of the soil, and the eradication of the weeds, so as to hinder them from interfering with the growing crop.

When we pass from Palestine to the shores of Greece and Italy, we come to regions whose characteristics, in their relation to agriculture, bear a nearer resemblance to those of our own land. They are not without forests: their climates are somewhat warmer than ours; the deposition of moisture, under the forms of rain, hail or snow, instead of being confined to particular seasons, occur, as with us, in succession—one or the other of them, at moderate intervals, throughout the year. The modes of culture, therefore, that are appropriate to these famous countries, may be expected to approach more nearly to what obtains among ourselves. It is *possible*, therefore, that by the study of the ancient classics, some of which touch incidentally upon the topic of agriculture, and a few, as Virgil, Cato, Varro and Columella, treat professedly of it, we may be able to learn something in regard to the best methods of managing our farms here in North-Carolina. In point of fact we can find in them very little that is beyond the science and skill of an intelligent negro on any common plantation.

The notices which the Greeks have left us of their modes of culture are few and meagre.—There are certain facts connected with the growth of vegetables, which are likely to force themselves upon the attention of the most casual observer; and which were not neglected in

the agriculture of this or any other ancient people.

1. The rankness of the grass and weeds just about the spot where some manure has fallen, may be expected to suggest to the most slovenly and careless farmer the application of the same substance to the roots of wheat or any other vegetable he may have under cultivation, as a pretty certain means of rendering the returns larger, of a better quality; and on both accounts more valuable. Hebrews, Greeks and Romans, seem therefore alike to have understood the effect of manures, though Hesiod, one of the most ancient of the Greek poets, whose works have come down to us, and who wrote expressly of agriculture, does not comment on them at all.

2. When a pile of logs or a brush-heap is burnt in a field, the growth upon that spot will show that some influence has been exerted, or something has been liberated from the wood and deposited there, which is favorable to the increase of vegetables of every kind, whether wild or cultivated. This will naturally lead to the application of ashes as a manure, and of course with good results.

3. From the visible effects of the summer shower, we are naturally led to conjecture that by supplying water in any other way, we may accomplish the same ends. This will be true, especially if we can direct a running stream from its course, and lead it along our cultivated fields. The great principles of agriculture, therefore, that were received, and the processes that were adopted and carried into practice by the ancients, were few in number.

1. The soil has to be loosened and mellowed by means of the plough or some other mechanical agency, before the seed is committed to it; and it is desirable that this stirring of the ground be renewed subsequently, whilst the crop is growing.

2. Other vegetables besides the one we are cultivating are to be rooted out, or the crop is to be kept clean. Solomon represents himself as having "passed by the field of the slothful, and by the vineyard of the man void of understanding; and lo it was all grown over with thorns—and nettles had covered the face thereof."

3. They understood the use of stable or farmyard manure, though they do not appear to have valued it as highly as do the moderns.

4. They esteemed ashes as a manure.

5. They were aware of the beneficial effects of irrigation.

6. Finally, they were not wholly ignorant of what is accomplished by a judicious rotation of crops. Their method of fallowing differed from ours in one particular; it was extended through a longer period. The field that was to be sown in

wheat in the year '57, was ploughed for the first time in the way of preparation in the fall of '56.

7. We learn from Pliny that the use of marl was understood, and its application practiced in France and Britain; whilst, if not unknown, it was at least neglected in Italy.

From agriculture proper, one of the authors before me, Varro, proceed to the subject of stockbreeding, to which he devotes eleven chapters.

1. On the origin and dignity of stock-breeding.
2. On Sheep, rams and lambs.
3. On goats of both sexes and kids.
4. About the hog.
5. Concerning bulls and cows.
6. Concerning asses.
7. Of horses and mares.
8. Of mules of both kinds.
9. About dogs.
10. About shepherds.
11. Of milk, cheese and wool.

All this is, of course, very learned, and if any one of the company now here shall be pleased to enter upon the study of the *Latiu* and read Varro, that he may learn over again what he knows already, I have only to say that this is a free country.

We will leave the ancients then, pass by the dark ages, and come down at once to comparatively modern times. Britain, the country of the ancestors of most of us, was long, like the rest of Europe, thinly peopled and badly cultivated. Even after the revival of learning, the business of farming was not at a higher level in regard to either theory or practise than amongst the ancient Greeks and Romans. The first considerable improvement was suggested by a man in whose views and plans for a better method of culture, truth and error were strangely mingled. Down to his time nearly all crops had been sown broadcast, as the small grains are generally with us.

In 1731, or one hundred and twenty-five years ago Jethro Tull published his treatise on horse-hoeing. He was an earnest and keen observer, and noticing the effect produced by a careful cultivation and the loosening of the soil, he drew the conclusion that the one and only thing required for the production of a good crop, beyond the mere eradication of the weeds, is to loosen the ground repeatedly—to keep it, in fact, always loose and mellow, so that the roots of the growing plants may easily penetrate it in search of the nourishment they require. He made small account of manure, almost the only use of which he represented to be to divide the terrestrial matter, which affords nutriment to the mouths of the vegetable rootlets, which end can be accomplished, he said, more completely and in a way in all

respects preferable, by tillage. Tull begins by showing that the roots of plants extend much farther than is commonly believed, and then proceeds to inquire into the nature of their food. After examining several hypotheses, he decides this food to be fine particles of earth. It is necessary, therefore, not only to pulverize the soil by repeated ploughings before it is seeded, but as it becomes gradually more and more compressed and hardened afterwards, recourse must be had to tillage, or horse-hoeing, as he called it whilst the plants are shooting up, which also destroys the weeds that would deprive them of the nourishment that is in readiness for them. His system of tillage was very much the same that has long been practised in this country in the culture of corn, and at a later date of cotton, only he would discard manure altogether as too filthy a substance to be employed in the production of what is to be used for food; and he would apply the method or process of ploughing or horse-hoeing with some kind of coulter or cultivator to the crops, where each plant occupies a much smaller space than does a stalk of corn or cotton, as in the case of turnips and wheat. Of course, when the ground is to be stirred between rows which are so much nearer together, it becomes indispensable that those rows be perfectly straight and true, their distances from each other exactly equal, and that the whole business be conducted with the utmost care and precision. Tull contributed indirectly, therefore, to the neatness and beauty of the agriculture of Great Britain, and the perfection of the methods now in use there. The turnip crop, in particular, which receives so much attention there, thrives wonderfully under this kind of management. and if introduced into the smaller patches that are seen of this season of the year somewhere about every plantation in N. Car., would have an excellent effect. With the same expenditure of manure, a crop of equal goodness would be produced over a much larger surface, and we should have a better supply of an article on which to feed our wives and daughters during the winter. Tull represented a rotation of crops to be unnecessary at least, if not utterly useless.

Men of better sense and sounder judgment, discarding the whimsies of Tull, availed themselves of his reasonable suggestions. They continued to collect, preserve, and apply their manures as they had done before, and at the same time adopted his methods of careful tillage, and his great panacea for so many of the ills of agriculture, horse-hoeing, for those crops to which it is especially applicable.—The farming of England underwent a gradual though slow amelioration. The great agent, the science that was to carry it forward to a perfection, the at-

tainment of which had hitherto been regarded as impracticable, was as yet unknown—was yet to be called into being.

The origin of the modern chemistry dates no further back than a single century. In 1756, Dr. Black published his "Thesis de Magnesia Alba," in which he showed that, besides the air we breathe, there is at least one other kind with properties wholly different, and it became probable that there are many other such substances. Chemists entered with ardor into the new field of investigation that was in such manner laid open to them, and the constitution of vegetable matter became, so far as relates to the great facts and principles connected with it, pretty well understood. Vegetable fibre of every kind, as seen in trees, in grasses, and other products of cultivation, is composed mainly of three substances, viz: oxygen and hydrogen, which are the constituent elements of water and carbon, or the coal that is seen at the blacksmith's shop. Water is present every where in a favorable season, so that we can very well understand, whence *that* is procured by vegetables of every kind. But with regard to the carbon, it is at first sight by no means clear whence it is that it comes. Take, for example, a field of corn at fodder-pulling time. There is a large burthen of carbon in it—in the stalks, the blades, and the ears. There is often very nearly, if not quite, as much carbon in the soil that late in the season as there was in the spring. From whence, then, has this constituent of the crop been derived? It was at length ascertained very fully by a long course of experiments instituted by different philosophers between the years 1770 and 1800, from what source it is that vegetables are supplied with the larger part of the carbon they contain; that it exists in a state of combination, united to another elementary substance, in a gaseous state, diffused in small proportions through the atmosphere. This gas, or air, bearing the name of carbonic acid, is, so far as the wants and necessities of *animals* are concerned, to be regarded as an impurity in the substance we breathe. If it exceeds a certain proportion or limit, the air containing it becomes positively noxious and deadly. It is what is sometimes used, especially by females, for the purpose of suicide in Paris and elsewhere. It is a product of respiration, of combustion, of the slow decay of animal and vegetable matter, and other agencies. It is absorbed by the leaves of the plants, decomposed under the influence of the light of the sun, the carbon retained for the use of the vegetable, and the pure, vital air, which is one of its constituents, given out. The leaves with which the forests are clothed in summer have no other use or purpose so far as has been hitherto ascertained, than the accomplishment of these

changes. The grove around the University furnishes an experiment on a large scale, illustrative and confirmatory of the truths that have just been stated. The soil contains almost no carbon under any form. The leaves, when they fall, at this season of the year, are mostly swept off by the wind during the winter, and what few remain are burnt at the opening of the spring. Yet the quantity of carbon in the trunks and limbs of the trees is evidently increasing from year to year. An additional, and it is by no means an inconsiderable quantity of carbon is accumulated in the leaves themselves, which, as has just been stated, are either swept off by the wind or burnt.—There is no other source from which all this carbon can by any possibility have been derived but the atmosphere.

The effect of animal life, therefore, is to contaminate the air we breathe so far as its relations to their own healthful existence is concerned, and at the same time to charge it with nourishing food for vegetables; whilst on the other hand, vegetables rob the air of what is most grateful and congenial to their own appetites, and restore it purified and cleansed to meet the wants of the animal.

This was a prodigious step in advance in our knowledge of organized nature, revealing to us much in the economy of the vegetable and animal world which it was most desirable to know, and furnishing an explanation to a certain extent of the uses of putrescent manures; but the information so acquired was with reason a good deal more prized by the vegetable physiologist than by the agriculturist.—Indeed, the latter cared but little for it; he could make very little use of it.

[TO BE CONTINUED.]

SPORTS.—A Scotch correspondent tells us of a case as strange as the strangest yet recorded, and more puzzling than most.

We learn that he has a gooseberry bush which bears indifferent, on each small twig red or yellow berries, the red superior in flavor to the yellow, and both dissimilar; the reds, too, are unlike, for some are rough, and others smooth; and the yellows bear seed that is red. Had a handful of yellow berries been thrown in among the reds, and accidentally stuck to the branches, the mixture could not be more complete.—[Horticulturist.]

TO KILL WEEDS.—Take one pound flour of sulphur and ten of quick-lime, boil them in an iron vessel with water, let the liquor settle, draw off the clear part, dilute it according to circumstances, and with it water-alleys and pavements where weeds are growing. They will not reappear for several years after this treatment, which is successfully practised in Europe.

North Carolina Arator.

RALEIGH, N. C., DECEMBER, 1853.

We are authorised to state that neither gambling nor the sale of liquor were authorized by the Managers at the late State Fair; and that if either was done there, (as reported, and heretofore noticed,) it was without their knowledge or consent.

TO BE "INDEPENDENT OF SLAVE LABOR!"

In our article on the introduction of the Chinese Sugar Cane, reference is made to the fact, that Mr. Hyde, the correspondent of the New-England Farmer, chuckles at the idea that the farmers of Massachusetts, by the culture of this plant, will "be no longer dependent on slave labor for their supply of sugar and molasses." We made no remark, in that place, on this hypocritical declaration, because it would have been a digression, tending to defeat our object, by diverting the attention of the reader from the matter submitted to his consideration. But such a sentiment, expressed in the common vehicles of information, should not be passed over without condemnation. We are forced to believe it hypocritical, because, 1st. the people of Massachusetts, while professing to regard the products of slave labor as tainted with sin and iniquity, continue to use them, whether they be articles of necessity, or luxury, or profit; and because, 2ndly. if they should raise these articles themselves, so as to render them independent of slave labor for supplies, they would sell them to slave-holders, as they now do their mousaud and one "Yankee notions," for money made by slave labor—an article much more corrupting, especially to Yankee cupidity, than sugar or molasses; and 3rdly. because the white servants of the North are bound to servitude as severe as that of negro slavery.

Whatever liberties politicians may take in their discussions, such miserable cant ought by all means to be excluded from the pulpit and agricultural journals.

Now, we like the New-England Farmer, because it is a good agricultural paper, and we have seen no such irritating slang from the pen of the Editor; but he ought to exclude it altogether from his pages. The whole North is full of false philosophy, false theology, and false rhetoric—all calculated to captivate and inflame the vulgar mind in that locality, and excite unfounded hatred to the South, and innumerable sedition and treason against the Union.—A check is put to this state of things, the South will retaliate. There is no philosophy, no truth in history, if she does not. To what consequences the mad and mischievous interference of our Northern brethren with our institutions, with which

they have nothing to do, may lead; to what extent they will operate, how much more severely they will be felt by one section than the other, is difficult to say; but go on they will, more or less rapidly, according to events and to the humor of the times, until this glorious Union will be split into fragments, and the best system ever devised by man for human government, and liberty, dashed into irretrievable ruin. But we believe, in our heart, that in such a deplorable event, the North will be visited by a withering and blasting retribution, and a Southern Republic will arise and flourish and become the master of this wide-spread country.

We tell our friend of the Farmer, that the people of the North, are suffering themselves to be deluded to their ruin, by a wild and disgraceful fanaticism and an unreasonable desire to interfere with the domestic affairs of their Southern brethren; and that, as a conservative public guardian, he would render service to God as well as his country, by excluding all unfriendly remarks on the subject of negro slavery from his columns, by exerting his extensive influence to check the spirit of fanaticism; to throw oil on the troubled waves; to spread his excellent maxims on domestic economy, and useful information on the improvement and cultivation of the soil in an unexceptionable form, through the length and breadth of the land; and to teach the people of all sections to have no other views than the support of their happy form of Government as it was bequeathed to them by their fathers, and by which they are protected in the institutions of their choice, and in their peaceable and useful employments.

CHINESE SUGAR CANE.

We call the attention of our readers to the communication in this number of the Arator on the introduction of the Chinese Sugar Cane; and we add that Mr. James H. Hyde, of Newton Centre, Mass., in a communication to the Editor of the New-England Farmer, November No., states that he raised some of the Chinese Sugar Cane this year, which was planted on the 20th of May, which reached the height of ten feet. When the corn was just in bloom he cut several stalks, crushed and pressed out the juice, which he boiled down to molasses. The quart of juice which he boiled made a pint of thick molasses. He thinks it will make the finest of sugar; and congratulates the people of the old Bay State that they need no longer be dependent on the proceeds of "slave labor" for that necessary article; inasmuch as every farmer may raise his own sugar and molasses and compete with the South in making sugar for market. He says cows, pigs, and even horses will eat the stalks as well as leaves with the greatest avidity, the tops may be used to make

brooms, and the grain to feed poultry and hogs.—The Editor of the New England Farmer states that his "own experiments with the growth of the Chinese Sugar Cane correspond with those of his correspondent;" and he thinks it a highly important acquisition to their products.

Richard Peters, Esq. of Atlanta Georgia, gives his experiments with this new plant in the November number of the Southern Augusta Cultivator.—He calls it Sugar Millet. It closely resembles the "Guinea Corn," in seed and growth. He planted 15th April and 18th May, on land that would produce, a seasonable year, 40 bushels corn per acre, but this year not over twenty: Seed sown in drills 3 feet apart, intending to thin out to 6 inches in the drill, but did not come up well; it was worked out same as for corn; plowing twice and hoeing once.—With a horse power mill, (procured from Messrs. Winship, Atlanta,) two mules, and one hand to put in the cane, and a boy to drive, he crushed out juice for eight gallons of syrup per hour. On the 13th Sept. the seed were fully ripe, when the fodder was pulled and the seed heads cut. Yield of fodder (leaves) per acre 1,100 to 1,300 lbs. Yield of seed per acre 25 bushels, weighing 36 lbs per bushel. First trial, 70 canes gave 20 quarts of juice; 40 gallons and 1 quart of juice gave 8 gallons of thick syrup, about 1 gallon molasses to 5 of juice. He gives the product of a quarter of an acre as follows:

1. *Best eighth of an Acre.*

Yield of juice from 3,315 canes,	253 gals.
" " syrup from 253 gallons of juice,	58½ "
Rates per acre of syrup,	468 "

In this trial 4½ gallons juice yielded 1 gallon syrup.

2. *Poorest eighth of an Acre.*

2,550 canes, 179 gallons juice, 43½ gallons syrup; rates per acre syrup 346 gallons.

Thirty canes weighed 49½ lbs, and yielded 25¾ lbs juice.

An experiment, for comparison, was made with Indian corn: 30 stalks weighed 35¾ lbs, made 15½ lbs juice, and only half pint syrup, unfit for table use.

His directions for making syrup are: Juice to be put in boilers soon as pressed, and boiled slowly until the green scum ceases to rise; then stir a tea spoonfull of air slacked lime to five gallons of juice; continue boiling and skimming until the syrup thickens and hangs down in flakes on the rim of the dipper. He estimates the cost of making the syrup in upper Georgia to be not more than 10 to 15 cents per gallon, and intends to plant fifty acres in the cane next year; believing it will make both sugar and molasses, and become a profitable crop to the farmers and planters of the Southern States generally. His papers prove it. With only half a crop, (owing to the

difficulties of the season,) he has made at the rates of 468 gallons of syrup to the acre, which, at 30 cents a gallon, would bring \$140,40; and after deducting 15 cents per gallon for expenses in making, leaves a clear profit of \$70,20 per acre: more than twice as much as can be made, this side of Alabama, on Cotton; this, two, under the most unfavorable circumstances—only half a crop having been raised. Take off one-third of this profit, and there is still left a margin for handsome profits.

But as suggested by our correspondent, let the public be neither raised into feverish excitement by the results and calculations which have been published on this subject, nor deterred from a cautious and prudent trial of the Sugar Millet, by the fear of humbug. There can scarcely be the shadow of a doubt that it will be a valuable acquisition as a forage crop, and probably for sugar and molasses, since its juice has been found to be rich in saccharine matter, resembling in flavor that of the common sugar cane. In France, it is cultivated for sugar, brandy, and champagne cider.

We are indebted to the politeness of Mr. Peters, of Atlanta, for which he will please accept our thanks, for a package of seed raised on his farm last season, sufficient to plant half an acre, and we intend to give it a trial. The Editors of the American Farmer will also please accept our thanks for a small package received from them.

It is proper to State, that a writer in the Southern (Georgia) Cultivator, over the signatures of "Ruricole," pronounces the "Chinese Sugar Cane" to be nothing more nor less than the "Guinea Corn" imported from Africa many years ago, which then created a sensation—had its day—and went down to the tomb of the Humbugs; But the highly intelligent Editors of that valuable paper insist that "Ruricole" judged only by sight—if he had tasted, he would have come to a different conclusion; and we learn from a private source that the Sugar Millet is more than Mr. Peters claims for it.

Chinese Prolific Pea.—The Augusta (Geo.) Cultivator publishes a communication from W. F. Douglas, Esq., of Fort Bend, Ark., which states that Mr. D. has fully tested this pea—that it yields in peas or hay five times as much as any pea he has ever seen planted—that it should be planted in ridges such as are thrown up for cotton, 4 feet apart, 1 or 2 peas in a place—as early as possible. He raised an acre and a half, on old and unmanured land, which would have fattened 50 head of hogs. The vine is soft and nutritious, having no woody fibre. The peas are very easily gathered, growing in clusters. The Editors say they have the testimony of a number of gentlemen of the highest respectability—neigh-

bors of Mr. D. fully corroborating his statement.

WHY MAY NOT OUR SHOES BE MADE AT HOME?

Our correspondent, "Con Amore," earnestly recommends the forming of a Company to establish an extensive Shoe Factory in this City; and offers strong reasons for the enterprise. He shows that there is an opening for a heavy and profitable business; and that capitalists who desire to make permanent investments, from which they will realize large and certain profits, cannot do better than place their funds in such an institution. Will they do it, and give employment and prosperity to a large number of industrious and respectable mechanics; enlarge and enliven the business, the population and the improvements of the city; add to their own fortunes; and contribute to the independence and greatness of the State? Or will they still give their money to build up and increase those who already have the will, and acquire from that very means the power to turn upon and rend us?

BEST STOCK HOGS.

For the information of our readers, desiring to secure the best breed of hogs, for pork, we publish the following extract of a letter to the Editor of this paper, from Messrs. S. Sands & Worthington, Editors of the American Farmer, whose opinions stand number one on all such subjects, and are, therefore, entitled to the highest confidence:

"We do not believe a hog of the Bedford breed to be had in this State. Col. Morris, of New York, could probably advise you where to get them genuine. From what we have heard of the Bedfords, we have reason to believe they are superior to the Chesters. We think a cross of the Suffolk on the Chester would probably make the best stock hog. Mr. C. B. Calvert, of Bladensburg P. O. has the Suffolk, and Mr. Warns near this City (Baltimore) has the Chester for sale."

A COLT FROM A MULE.

The following statement from Gen. Pirrns may be implicitly relied upon. We had the pleasure of forming his acquaintance and enjoying the hospitalities of his house, when in Texas last Spring.—He is a gentleman of the highest respectability, and distinguished for his kindness and unaffected urbanity. He lives some 35 miles from Austin, at the foot of the range of mountains extending from that City to San Antonio, in such a healthful, fertile, beautiful and delightful region—at such a charming site, surrounded with such excellent society, that if it were not for the distance from market and scarcity of tim-

ber, we should be tempted to pull up stakes and seek a residence near him. But we have digressed. The colt from a mule, which the General reports is the second of which we have heard—a mule near Norfolk, Va., having borne a colt a few years ago, which, we well remember, created some talk at the time.

SAN MARCOS, TEXAS,
October 7, 1856.

I have a mule that I raised, three years old in June last, that now has a colt by her side. Please say what I must call it. Its ears are not like the mule nor the horse. In other respects it resembles the mule. If any one disputes it I have the mule and her colt in my lot; the doubting Thomases can see for themselves.

Very respectfully, your friend.

JNO. D. PITTS.

Messrs. Ford & Jones.

MARTIN COUNTY FAIR.

We learn from the Democratic Banner, that the 4th Annual Fair of the Martin County Agricultural Society, was held at Hamilton, on the 1st Thursday and Friday of November, with becoming spirit; that everything was admirably managed, that there was an increased number of visitors, and marked improvement, as evinced in the highly creditable exhibition of articles, in almost every department. Old Martin is leading off handsomely in the glorious march of improvement. May her garner ever be filled with the finest fruits of the soil!


To Destroy Fly in Wheat.—It is said two bushels of water-slacked lime, to the acre, sowed on wheat, when the dew is on it, so as to form a ley that will kill the maggot, is EFFECTUAL.

PEA FALLOW FOR COTTON.

It is said that peas sowed broadcast, and the vines suffered to rot on the land, will make a poor soil produce double as much cotton as it would if not thus treated.

GREAT YIELD.

We learn from the Standard, that Mr. Williamson Page, of this county, raised the following crops on one acre of land, viz: In September, 1855, he sowed one bushel of wheat mixed with turnip seed, from which he raised forty-five bushels of wheat and about 800 bushels of turnips. In June, 1856, he planted the same ground in corn and peas, and has harvested fifty-one bushels of corn, and sixty-four bushels of peas. The only fertilizer used was stable manure. Who can beat this?

 We invite the attention of our readers, who may desire to procure the seed of the Chinese Sugar Cane, or Sorcho Sucre, to the advertisement of W. P. Orme, Esq., of Atlanta, Georgia, who has obtained the control of Mr. Peters' crop of seed. By the way, we understand Mr. P. exhibited a sample of these seed at our late State Fair; but by some unfortunate and unaccountable oversight, we observe, no notice was taken of them by the judges—a matter much to be regretted, since it works (tho' doubtless unintentionally) injustice to both the enterprising exhibitor and the public.

THE CASHMERE GOAT.—We are indebted to R. PETERS, Esq. of Atlanta, Geo., for a sample of the fleece of the Cashmere Goats in his possession. It is finer and more glossy than silk; and a matured buck will yield from six to seven pounds of this precious article at a shearing. We are anxious to see this fine animal introduced in our State, and hope some of our enterprising farmers with means will take early steps to add it to their improved stock. We shall hereafter publish electrotypes of Mr. P's Goats, accompanied with a further description.

AMERICAN RAILWAY GUIDE, for the United States and Canadas.

We have received the October number of this necessary pocket companion of the traveller. It contains "correct tables for time of starting from all stations, distances, fares, etc. on all the Railway lines in the United States; together with a complete Railway Map. Subscription per annum \$1 25; wholesale price, 7 dollars per hundred. Edited by R. S. Fisher, Editor of Colton's Atlases, etc. New York: Published on the 1st of every month, by Dinsmore & Co. No. 9 Spruce St." This appears to be a useful work.

THE ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS AND CULTIVATOR ALMANAC for 1857—embellished with one hundred and forty-two engravings, and containing one hundred and forty-four large duodecimo pages. By John J. Thomas, author of the "American Fruit Culturist," "Farm Implements," &c. Albany, N. Y.: Luther Tucker & Son.

This valuable and interesting Annual is on our table, and it is indeed a welcome visitor. We know not that we have ever seen so much useful information, on all branches of husbandry, in so small a compass, and at so small a price. Besides the usual calendar pages, it treats, among others, on the following subjects: Laying out Farms, Farm Houses, Farm Implements, Fruit Culture, Ornamental Planting and Plants, Rock Work and Rustic Structures, Weights and Measures, Farm and Garden Economy, Domestic Animals, Miscellaneous. Price only twenty-five cents. Every house-keeper should have a copy.

POMEROY'S BOOKSTORE.—We call the attention of Members of the Legislature and strangers visiting the City, to the advertisement of Mr. Pomeroy, who, it will be seen, keeps always on hand a large and fine assortment of Books and Stationary, and spares no pains to accommodate and please the public.

REVIEW OF BISHOP IVES' "TRIALS OF A MIND," &c. By "An Ex-Clergyman."—Mr. Turner, of the North-Carolina Book-Store, recently presented us a copy of this new work; remarking, at the time, that he was totally ignorant of its character, but, presuming it to be a respectable little book, which would be sought by the public, he brought out a few copies to complete his assortment of new publications. We have learned from him since that had he been apprized of its true character, it never should have appeared on his shelves; and we know the worthy book-seller speaks truly; for it is one of the most futile and venomous performances of the day, consisting of nothing but a tirade of abuse bespattering Ex-Bishop Ives and the entire priesthood, from Melchisedek down to Joe Smith—embracing, in its wide sweeping denunciations, the clergy of every denomination; and behind a hypocritical profession of faith in a pure and simple Christianity, shorn of those who minister at its sacred altars, discloses the hideous cloven foot of the rankest infidelity. Its author is no doubt an apostate, who, under the pretext of reviewing the course of Bishop Ives, seeks to quiet his conscience by aiming a malignant but very impotent blow at our holy religion—aye, impotent; for although the pen of the writer is fluent in invective and bald assertion as a maddly branch swollen by the rain, the arguments which it strains out, if indeed it supplies any thing that should be dignified with the name, are as destitute of weight and solidity as the falling flakes of snow, and, in the light of truth, as soon melt and disappear.

STEAM PLOWING.—Mr. Hussey's Steam Plow has been operating successfully in the West. His engine, carrying six plows, at the Indiana State Fair, did its work to the entire satisfaction of those present; and the Executive Committee awarded it a silver cup worth twenty dollars, and the Society's diploma—pronounced by the American Farmer to be "a well deserved compliment to an invention of very high merit." A similar invention is working well in England. At a late meeting of the Royal Agricultural Society, a steam plow constructed by Mr. Fisher, was tested. It plowed one acre and sixteen poles in an hour, with an eight horse power steam engine.

A GREAT INVENTION.

Making a Coat without a Seam.—The New York Sun says:

A very remarkable invention has recently been patented for making coats of felt, without seams, which is thus described:

"The wool, as it passes through the carding machine, is woven upon cylinders of peculiar shape, the layers of wool crossing each other at different angles, the fibres being stretched to their utmost, making a close, well-woven batt, which can be formed into bonies; others into sleeves, pantaloons, mittens, shoes, leggings, and the like. Over these cylinders are drawn closely fitting bags, or coverings of cloth; the whole is then immersed in water, whence they are taken and dropped into rectified

tubes heated by steam. A slight vibratory motion is then given to them, which felts the wool in a few minutes, leaving, when coats are to be made, the ends of the sleeves and the arm holes of the coat soft; they are then joined and firmly felted together, presenting a coat perfect in shape and even in texture. They are then fullled until they become firm and solid. Most of these garments are dyed in the wool before carding, those that are not are at this stage ready for the dyer. Next they are dried on copper forms in the shape of men, heated by steam. While upon these forms they go through a finishing process, which gives them the appearance of the goods known as Beaver Cloth. They are now ready for lining and trimming, which is done according to the taste or design furnished. Coats of all kinds designed mainly for business or overcoats are made at this establishment, from a plain sack or pea jacket, to an ornamental surtout; ready for trimming.

The facility with which the garments may be fabricated by this method is said to be such that a coat of any color may be made and ready for wear within twelve hours from the time when the wool of which it is made was growing upon the back of the sheep.

MECKLENBURG FAIR.

We learn from the Charlotte Whig, that the Annual Fair of the Mecklenburg Agricultural Society, was held in that place on the 20th ultimo. The Whig says:

"We were highly gratified to find so much spirit manifested by many of our agricultural friends, and it is very surprising to us that so few farmers have joined the Society, when it is intended immediately to benefit their vocation. We have no doubt, from what we witnessed on Thursday that this Fair will grow in interest every year. As the Society will notice the different articles we have not reported them."

It is further stated that the Society is making every effort to extend its usefulness by securing a lot and erecting buildings for its future exhibitions. We learn also that over \$800 were raised almost immediately by life members, and from the efforts to be made we have no doubt a sum necessary to defray all expense for its permanent establishment in Charlotte will be raised.

This is what the friends of improvement should do in every county; and we hope to see the day when there will be a well organized and spirited Agricultural Society in every county in the State.

ORANGE COUNTY FAIR.

Old Orange held a highly respectable Fair, showing handsome progress among her people. The premium for the largest yield of corn to the acre, 80 bushels, was awarded to C. C. Tinnin. Premiums were also given for best crops of wheat, oats, tobacco, sweet and Irish potatoes, &c.; but the quantities yielded are not stated in the list published in the Recorder. Well done Orange!

NORTH-CAROLINA ALMONDS.

Dr. J. A. Russell, of Granville, exhibited a lot of Almonds at the State Fair, which were in every respect equal to those of foreign production. His trees grow in the sunny side of his garden, resemble peach trees, and are nearly as easily cultivated.

A GREAT HONEY CROP.

Mr. M. Quinby, of St. Johnsville, Montgomery county, N. Y., has sold this year upwards of 20,000 pounds of honey, principally produced by himself, and the remainder by a few neighbors who have followed his example. Himself and son make the production of honey a business, and undoubtedly a very profitable one. The honey is deposited by the bees in small, cheap boxes, with glass sides and ends, and sold in the same by weight, including the weight of boxes.

AGRICULTURAL SOCIETY.

The annual meeting of the Cumberland Agricultural Society has been held, and the following gentlemen elected officers for the ensuing year:

President.—Joel Williams, Esq.

Vice Presidents.—A. S. McNeill, Hugh McLean, and David Murphy.

Executive Committee.—A. A. McKethan, E. W. Barge, W. McL. McKay, John Waddill, A. H. Dewar, John C. Smith, John A. Williams, Edward Spearman, H. L. Myrover, Wm. Cade, Jno. P. McLean, J. G. Cook, Jno. R. Murchison.

Secretary and Treasurer.—John P. McLean.

DRAINING. The following remarks on the importance of drainage, are eminently worthy of attention:

"The importance of thorough draining, and perfect preparation of the soil, have not received the consideration they deserve; especially where its silicious character does not furnish a ready natural conductor to superfluous moisture. Thorough draining lies at the foundation of all successful cultivation. In cold, wet, undrained grounds, the disease of trees commences at the root, which absorbs injurious substances, and the tree ceases properly to elaborate its nutritious matter. When

ever there is an excess of water, and consequently too low a temperature, and the soil is not properly drained and thoroughly worked, the vital energies of the plant are soon impaired, and its functions deranged. I am inclined to think that death by drowning is quite as common in the vegetable as in the animal kingdom, with this difference, that it is not so sudden. How many of the diseases, such as the spotting of the leaf and fruit, the cancer, fungi and decomposition of the bark, are attributable to this cause, it is not easy to determine. perfect drainage, which should always be accompanied with subsoiling or trenching, permits the air and light to penetrate and sweeten the soil, warms it, and prepares its latent fertilizing properties for the nourishment of the plant.

"A writer in the Journal of the Royal Agricultural Society of England says: 'I have frequently found the soil of a well drained field higher in temperature from 10 to 15 degrees than that of another field, not so drained, though in every respect the soils were similar.' Another advantage is, that vegetation seldom or never suffers from the drought, where the soil has been properly drained and worked."

LARGE YIELD OF WHEAT.

Mr. J G Anthony, of this county, informed us the other day, that he had a field of wheat the past season, which yielded an average of $28\frac{1}{2}$ bushels to the acre; the wheat, after being well cleaned, weighing 64 lbs. to the bushel. This grain, Mr. A. informs us, is of the white bearded kind.

We regret that we did not have an opportunity of learning the nature of the soil, mode of cultivation, &c. which produced so large a crop.—When we get up such an agricultural society as old Guilford should have in operation, we can then get and combine the united information and experience of all our best and most successful farmers, which will be of great practical advantage to the farming interests of the county. Greensboro Pat.

For the Arator.

TO CURE BACON HAMS.

Mr. Editor: Being a lover of good bacon hams, I have for more than thirty years past tried various methods of curing them, so as not only to protect the ham from injury by bugs, skippers, etc., but to preserve its juices so as to render it sweet and palatable. The different modes tried have resulted in a varied success—some better, and some not so good; but the following recipe, for which I am indebted to a highly respectable widow lady of a neighboring State, and which I have tried for several years past with uniform success, I can with confidence recommend: Cut out your hams as soon as possible, which is best done when the hogs are perfectly cold—rub them well with salt and salt petre, allowing about a teaspoonful of the latter, finely pulverized, to each ham—pack them away in the usual method, and let them lie from four to six weeks according to their size—the larger hams requiring longer time—take them up and cover the flesh or raw side of the ham with a good sprinkling of ground black pepper—have

some small bags made out of cotton osnaburgs, or stout, heavy domestics, just large enough to contain, each, a single ham, but sufficiently long to admit of being tied *above* the end or hock of the ham—put a ham into each bag and tie it *tightly above* the end—then dip them into a thick wash made of ashes and water, which should be about milk warm, and hang them up in the smoke-house while wet, and smoke well with hickory wood. During the process of dipping, the wash should be well stirred so as to keep it sufficiently thick—the ashes having a tendency to settle at the bottom. No further attention is necessary, except to smoke well until the hams are wanted for use. The bags will not cost more than six cents each, and will last, if taken care of, for several years.

S. F. P.

Palmyra, Caldwell Co., N. C., Nov. 21, '56.

[The above is from a source which entitles it to the fullest confidence. Our readers may adopt the writer's method of curing hams with the certainty of success. Now that his hand is in, we plead in behalf of the public that he will furnish us with the results of his experience and observation on other subjects. It would cost him but little trouble, and would, we are sure, do much good.]

Ed. Arator.

CHINESE SUGAR CANE, OR SORCHO SUCRE—PURE SEED.

The subscriber hereby informs the Planters, Farmers and Gardeners of the United States, that he has obtained from R. PETERS, Esq., of this City, the control of his crop of Seed of this valuable plant, some of the properties of which may be briefly summed up as follows:

First. An acre of the Stalks properly cultivated, will yield from 400 to 500 gallons of pure Syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains; and sown in close drills, will yield from thirty to fifty thousand pounds of superior fodder to the acre.

Third. It is so certain and prolific a crop that Planters may be sure of succeeding with it as a syrup plant anywhere south of the State of New-York.

This seed, which has been carefully kept pure, is now offered in cloth packages, each containing enough to plant half an acre 4 feet x $1\frac{1}{2}$ feet, will be furnished by mail at \$1 30 each, or at \$1, if sent by express, freight unpaid.

Dealers in Seeds and Country Merchants, or persons wishing to plant by the quantity, can be supplied at a liberal discount from retail rates.

A pamphlet containing a full description of this plant, its history, valuable properties, and a plate of the horse mill used for crushing, will be furnished by mail to all applicants.

Address, with plain directions for mailing or shipping.

W. P. ORME, Atlanta, Georgia.

Atlanta, Dec. 1, 1856.

9-2t.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address

W. E. WYCHE,
Brookville, Granville Co., N. C.

June 16, 1856.

4-4tf.

FARMER'S HALL, RALEIGH, N. C.



The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as JENKINS' OLD STAND, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the lowest possible rates, and in
a manner unsurpassed by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including Records for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.


THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.


The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857.  Here are fine chances to secure cash prizes.


The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

 **TERMS.**—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.


Letters should be directed (post paid) to
MUNN & CO.



128 Fulton Street, New York.

 Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.


VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

 The above, unless sold privately, will be offered at public sale, on the premises, on Saturday the 13th Dec., at 11 o'clock.

 The subscriber will also sell his present residence,  a mile East of the Capitol, in the midst

of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

 I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Pears, Peaches, Plumbs, Apricots, Negarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford county, N. C., or to Owen Lindley, Cane Creek, Chatham county, N. C.

JOSHUA LINDLEY.

OWEN LINDLEY.

Nov. 1, 1856.

2t.

INDEX TO DECEMBER NUMBER.

Annual Address at State Fair, 644; North-Carolina Almonds, 653; Cumberland Agricultural Society, 653; how to cure Bacon Hams, 654; help for Clay Lands, 635; Chinese Sugar Cane, 636, 649; Colt from a mule, 651; Martin County Fair, 651; Mecklenburg Fair, 653; Orange Fair, 653; to destroy Fly in Wheat, 651; Draining, 653; Ground Pea Raising, 636; Best Stock Hogs, 651; Great Crop of Honey, 653; a sure way to improve, 633; a great invention, 653; Manure for Fruit Trees, 640; Editorial Notices, 652; State Fair Premiums, 641; Chinese Prolific Pea, 650; Pea fallow for Cotton, 651; To Manufacture Shoes in N. C., 637, 651; Value of Sheep, 640; Sports, 648; Slave Labor, &c., 649; Steam Plowing, 652; American Wine, 637; To kill Weeds, 644; Great Yield, 651.

PAYMENTS FOR THE ARATOR SINCE NOV. No.

Allen, George B., Forestville,	\$1 00
Brown, Y. W., Wilmington,	1 00
Bagley, Nathan, Perquimans county,	1 00
Burns, Thomas S., Fairfield, (thro' Mr. Turner)	1 00
Hinton, Major Charles L., Wake county,	1 00
Hinton, David, Tarborough,	1 00
Hodges, J. P., Mill Grove,	1 00
Graham, C. W., Kenansville,	1 00
Lewis, John W., Milton,	1 00
Marsh, A. H., Asheville,	1 00
Sanders, Col. Baldy, Smithfield,	1 00
Sanders, Lucien L., Smithfield,	1 00

PRICES OF PRODUCE.

In Petersburg (1st Dec.) Cotton is selling at 11 ¹/₂ @ 11 ³/₄. [The price 1st Nov. was 12 @ 12 ¹/₂, and not 15 @ 15 ¹/₂, as quoted, by an unfortunate blunder of the types, in our last No.] Wheat, 1 43 @ 1 56. Pork 2 in small parcels. Corn, 78 c @ Salt, Liverpool, \$1 80 @ 1 90; G. A. 1 36 @ 1 35, 7 sack.
In Raleigh, Pork, \$8 in small parcels.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, JANUARY, 1857.

NO. X.

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more at the same rates.

For the Arator.

Union, Davie Co., N. C. Nov. 28, '56.

Mr. Lemay: I fear you think I have forgotten the promise made in my last communication, respecting the operations of the Davie County Agricultural Society: My reason for delaying was, the Society failed to hold any regular meeting, on account of the nonattendance of its members. The Constitution of the Society required a majority of the members to constitute a quorum to do business; which we failed to get at every appointment; but the friends of the organization did not wish the thing to fail, and were determined to make another attempt, and try to improve by experience. The friends of the old Society (which was considered dead) assembled at Farmington the 13th Sept. and organized a new one, called The Davie County Agricultural and Mechanical Society, and located the same

at Farmington. The following are the officers, viz. M. Fulford, president; W. H. Perry and M. Cuthrell, vice-presidents; J. F. Cuthrell, secretary; and G. W. Johnson, treasurer.

The Society, (notwithstanding the lateness of the season,) resolved to hold a Fair the last Thursday in Oct. The curious of the county were inquiring if the Fair would be worth attending, considering the shortness of the time for preparation? The answer was returned, Come and see. The members were working men, and went at it with that resolution and determination that is praiseworthy in individuals or societies. A suitable place was selected and prepared; and when the morning came, the heavens appeared in all their beauty and grandeur, which gave evidence of the favor of the Deity and the success of the undertaking. As the sun advanced in his course, so the large crowds of spectators advanced to the Fair grounds; and as the crowds passed round the enclosure and viewed the beautiful animals that were exhibited, the inquiry was, "Did you believe that there would have been half so many things exhibited, or that there were half such fine animals in the county?" The

large hogs, the fat pigs, the beautiful cattle, both short horn and Devon milch cows, with their calves by their sides, and their udders swollen with milk, were beautiful. Then the horses, blooded and draught, saddle and harness, were enough to make the spectators think they must be at the State Fair.

The Mechanical department was not extensive, but some implements would do credit to any County in the State; and last, but not least, Floral Hall was so well decorated with the beautiful and good things, that any attempt to describe it would be so far from doing justice to our young and beautiful school Girls and wise Matrons, that we forbear: suffice it to say we have never had any thing of the sort in Davie that would equal it. I enclose a list of the awards published in the Watchman, and one Dollar for the Arator for 1857.

I remain your much obliged friend.

B. F. LUNN.

FROM THE WATCHMAN.

The Davie County Agricultural and Mechanical Society held their first Fair at Farmington on the 30th October, and awarded the following premiums:

STOCK.

For the heaviest Hog, 21 months old 600 lbs.

To Joseph F. Cuthrell. \$3 00

To Max. Cuthrell, heaviest hog 1 year old, 470 lbs. 3 00

Dr. J. P. Clingman, 2nd heaviest, 2 00

B. F. Lunn, sow and pigs, 1st premium, 2 00

G. W. Johnson, sow and pigs, 2nd do 1 50

Max. Cuthrell, do do do 3d do 1 00

" " Best pair pigs, (Nobone and Woburn) 2 00

" " Best Devon Bull, 5 00

Levi Fulford, half Devon calf, 1st pr. 1 00

Max. Cuthrell, one Devon calf, 2d " 50

Stephen Douthit, best short horn Bull, 5 00

G. W. Johnson, 2d best " " 3 00

Stephen Douthit, cow and calf, 2 00

B. F. Lunn, best short horn heifer, 2 00

Stephen Douthit, 2nd best heifer, 2 00

G. W. Johnson, half Durham calf, 1 00

Max. Cuthrell, best native heifer, 1 00

Col. S. Taylor, best Stallion, 2 00

Wm. March, sr., Colt 19 mo's old, 1st pr. 3 00

Wm. Brunt, Colt 2 1/2 years old, 2nd pr. 2 00

Wm. H. Perry, Colt 2 years old 3d pr. 1 00
 Stephen Douthit, best Jack, 2 00
 " " best mule 2 years six months old, 2 00
 Matthew Fulford, best mule colt, 2 00
 Wm. H. Perry, 2d best mule colt, 1 00
 Stephen Douthit, 3d best mule colt, 50
 Committee on Stock, Max. Cuthrell, Stephen Douthit and Wm. March.

AGRICULTURAL IMPLEMENTS, &c., &c.

N. Travillian, corn sheller, 2 00
 J. F. Cuthrell, best two horse plow, 1 00
 " " one horse plow, 50
 " " sub-soil plow, 1 00
 Col. S. Taylor, best sole & upper leather, 1 00
 Thomas Ferebee, best sample tobacco, 50
 do do do pair Brahmah chickens, 50
 Max. Cuthrell, best pr. Shanghai chickens, 25
 Committee on the above, Col. S. Taylor, Thomas Naylor, and B. F. Lunn.

LADIES' DEPARTMENT.

Mrs Edney Fulford, best counterpane, 50
 " " " 2d best do 25
 " " " best blankets, 1 00
 " " " best coverlet, 50
 Mrs. Eliza Fulford, 2d best do 25
 Mrs. B. F. Lund, the best quilt, 1 00
 Mrs. Eliza Fulford, 2d best do 75
 Miss Mary Ellis, 3d do do 50
 Mrs. N F Brock, for best jeans eloth, 50
 Miss E F Richards, best pair woolen socks, 25
 Mrs. Wm Perry, best butter, 25
 Mrs James N Cuthrell, 2d best butter 25
 Mrs Eliza Fulford, best carpet, 50
 Mrs McCoy, best Needle work 50
 Mrs M L Turner, best pair gloves 25
 Miss L A Cuthrell, lamp matt 25
 do do pine bur basket 25
 do do satchel 25
 Miss Emily Travillian, best Lace 25
 Miss Amanda J. Johnson, best drawing, 25
 Miss Mary Ellis, second best do 25
 Miss Mary E Chinn, 3d do do 25
 Committee, G W Johnson, Wm H Perry, and M F Fulford.

At the Society's plowing match there were four 2 horse turn plows entered, and the premium awarded to G. W. Johnson.

There were two subsoil plows entered, and the premium awarded to J. F. Cuthrell.

S. TAYLOR,
 B. F. LUNN,
 W. H. PERRY, } Judges.

Aluminum is now manufactured on a large scale at Rouen, France.

RAISING POTATOES UNDER STRAW.

For several years it has been circulated in the various agricultural journals of the country, that very successful experiments have been tested in potato raising, under straw only, no earth over the roots being suffered. In the perusal of the *Albany Cultivator* for the past few years, we have noticed the trials of correspondents, as they from time to time sent them to that journal for publication, and it would seem as if this cultivation was not only practicable, but of sufficient importance to induce farmers to adopt this system as a rule.—It appears now that there is sufficient evidence on hand to warrant every man who has a piece of ground devoted to a potato patch, to go into it so clean and labor saving a method. We find the following in the *Ohio Cultivator*, and would call our agricultural readers, and our experimentalists also, in that line, to a perusal of it:

"Several of our correspondents, within a year, have spoken favorably of the practice of planting potatoes and covering with straw, both as a less laborious and more profitable method of raising that crop. The idea is not new to us. As long ago as 1824, we saw this method practiced in Vermont, and it was reported highly successful, but for some reason it has not come into general use. The experiments we saw tried were by selecting a short pasture field, dropping the seed at suitable distances over the ground, and then covering the whole with a coating of straw, to the depth of a foot or more. In the fall the straw was raked off, and the potatoes were picked up, all dry. In wet seasons this plan was thought to be very effective. The Editor of the Pike county (Ill.) Free Press has been presented with potatoes raised the last season by a Mr. Shipman, of that vicinity, and details as follows:

"Mr. Shipman informs us that he planted them in the usual manner, and then covered them to about the depth of six inches with straw; after this no

further cultivation was required—the straw kept down the weeds, and the potatoes were not disturbed until they were dug. Not only has this method produced him a very superior potato, but it has this year brought him an extraordinary yield—four bushels to the square rod, or at the rate of six hundred and forty bushels to the acre.

"He has tried this mode of culture for three years past, and has, in every instance, found it to bring results superior to the common method. This year he has planted at three different times, with the following results: Early in April he planted Neshannocs in both ways, and Pinkeyes under the straw; all were in the same kind of ground.—The Neshannocs cultivated yielded two bushels and a peck to the square rod; those covered with straw, three bushels and one peck, and the Pinkeyes covered four bushels. Pinkeyes planted on the 24th of May, covered with straw, yielded two and a half bushels and four quarts to the square rod. They were the smallest potatoes. Pinkeyes planted about the last of June, covered, brought two bushels and one quart to the square rod. These, although the smallest yield, were the largest potatoes, and of the best quality."

SPROUTING ORANGE ORANGE SEED.

NATURE'S METHOD.

The following communication is from the pen of one of the oldest and most experienced hedge growers in the country—and will be of interest to those engaged in an enterprise destined to work such glorious results for our farmers:

Soaking the seed for a week, then turning off the water, and keeping it covered with a cloth, stirring often for several days or until the seed sprouts, is the usual method adopted before planting. But this *matting* process, as it is called, is often attended with loss. For if you let it go a little too far, or hasten it, the seed will rot instead of sprouting. Again seed planted dry will often remain in the ground a year

without sprouting, and come up thickly the second spring, showing that the *rains and frosts* are the means which nature makes use of to dissolve the gluey substance enveloping the seed so that air can penetrate to the germ, which with the warmth of spring causes it to vegetate.

I have therefore pursued the following course for the last four years with uniform success, and being safer and less troublesome than any other, would earnestly recommend it.

I procure seed in the fall. Late in November, I mix it with three or four times as much fine earth and place the whole in open box—which I set out on the north side of the house, and allow it to remain undisturbed until planting time in the spring. The earth then is sifted out, and the seed planted, being careful not to let it dry before it is covered. A friend of mine who has raised plants for many years, and who planted fifty bushels last spring, says he thinks he gets enough extra plants, to pay for the seed by freezing over any other mode of preparation.

Seed should be procured from a responsible source—as much of it is worthless; (“Pitkin’s seed” I have always found good;) yet I am satisfied that bad management on the part of the purchaser, is often the cause of failure. As regards the *age* of seeds, I do not care particularly about it, providing it has been well kept. I have had it grow well, three years old.

Osage Orange will rapidly take the place of all other fences on our prairies, inasmuch as it is more protective, easier to be kept in repair, and the cost but trifling, when farmers make their own. And I contend that every *good* farmer, is not only competent to make a good hedge—but that he can make it a great deal better than most hedge growers will make it for him, as he being on the ground can attend to it at the proper time. The warrantee that professional hedge growers often give, that they will in a certain time make a lawful fence, would not be satisfactory to

me. For the same care at the *right* time can just as well make a hedge that will be impervious to chickens and small pigs as to cattle and horses.

On new ground, where the weeds will not be troublesome a hedge can be made quite as soon by planting seed in hedge row, as setting the plants. For a full year in growth is lost by transplanting. But in this case, the earth should be made mellow and fine, and the seed sown *thickly*. Say two to the inch, which is about one bushel to two miles, as the grasshoppers and other vermin will be sure to take their share of the little tender plants. When the plants are three inches high, or too old for insects to prey upon, they may be thinned out to a stand of about four inches apart. Spaces wider than this should be filled at the same time, by taking up when too thick, with a small trowel. By being careful to have as much earth adhere as possible, and not to break the little tap root, the growth is not materially retarded and all come on together.

I have seen a fine hedge made on the open prairie by turning the sod over, say five furrows wide, and sowing the seed in the *lap* of two furrows, which was covered with a little earth hauled on with a hoe. The seed was put to freeze the winter before, as spoken of above. The plants came up finely and required no attention, save the thinning out and filling of vacant spaces, for the first year. This required about three days’ work to the mile. The second year, it required two cuttings, one close to the ground in the spring, and the other three inches above, about the first of June. This was about one half day’s work each time. The labor, each year after this, did not exceed two day’s work to the mile, and four years from the seed, was sufficient to complete it. The quantity of seed to the mile was half a bushel. Every one can make their own estimate of cost. Many persons have supposed that the plant will not endure severe cold. It certainly has endured cold 35° below zero, the

past winter, without injury. If I was going to the northern part of Minnesota to live on a prairie farm, I should expect to hedge it with the Osage Orange. The only difficulty is *the first winter*, and on ground that heaves badly by frost. A sure remedy for this, is to cover the ground close up, on both sides in the *Fall*. The straw need never be removed, as it keeps the ground moist, and the weeds from growing in the summer. A better use can hardly be made with straw, than mulching hedges and fruit trees.

STABLING FOR HORSES.

Stabling of every description is an evil. It is impossible a stable should be so built that it will allow the horse one half the freedom he enjoys when loose out of doors. Most stables are built so as to aggravate their inseparable cruelty. The flooring slants from the manger to a gutter, which runs at the horses heels. Now, if horses be in the field, and at rest, they will always be seen standing upon a piece of ground that declines in precisely the opposite direction. The fact is, our modern stables throw the stress upon the back sinews or flexor tendons, and thus prepare many an animal for the injury he afterwards unexpectedly experiences.—Nor is this all: the stall is perfectly at variance with the habits of the horse; he is evidently gregarious, or lives among crowds of his fellow-creatures; the stall dooms him to solitude, and the groom sits behind to see he does not put his nose over the divisions, only to look at a comrade. In many stables the stall is so small that the horse cannot turn round; he can lie down perfectly at ease in very few; yet, there he stands, looking at the bare wall, with the stress upon his back sinews, for a period varying from twenty to twenty-three hours during the day. The horse, in any condition beyond the dominion of man, is necessitated to walk, in order to crop the herbage on which he exists; when under human protection, he changes a life of ceaseless activity for one of

all but continuous stagnation. Is it to wondered then that the sinews often fail! Or is it a cause of complaint against nature, that the feet and legs so often oblige man to allow his wretched servant to remain idle? The foot is the most valuable part of the horse; but, to preserve the foot, continued motion is imperative. This is denied; a condition the very contrary is enforced; and then man, in his presumption, blames nature because the foot of the horse is so often the seat of disease.

Loose boxes are better than stalls.—But in these the injury is only lessened, not removed. The horse has a loving heart bestowed upon him. He must love something. Lambs, dogs, cats, goats, fowls, &c., every creature he is permitted to see, by turns have become the object of his affections. Mr. Blaine records, that horses have defeated the utmost efforts of man to get them into condition when a companion has been taken away from the next stall, or when the animal has been stabled alone.—Bales, after the fashion of military stables, are to be preferred to wooden partitions, unless they be made much lower than at present. The stall should be wider and the floor slant from behind towards the middle, where the gutter may be placed, and then be gently raised and afterwards incline towards the manger. A notion is abroad, that the present flooring carries off the urine of the mare, but were stables paved in the manner we advocate, they would equally carry off the urine of geldings. The point in dispute is, surely, then, in our favor.

Most stables, moreover, are kept much too warm. Not that any are heated by means of a stove or fire, but the animals doomed to reside within them are doomed to breathe the same air over and over again, until it becomes hot, and smells so strongly of ammonia, as to sting the eyes and take away the breath of the stranger who unexpectedly enters them. This is not warmth; but foulness, filth, and abomination, which should immediately be

abjured. Let a stable be freely ventilated; it cannot have too much air at any period of the year; its inhabitants and the shelter of the wall will always make sufficient difference, especially when the mode of ventilation is considered. The air must never blow directly upon the horses, but the ventilation should be above their heads, for foul air has a tendency to ascend. If this plan were followed, the stable would range from forty deg. to fifty deg. in winter, and from sixty deg. to seventy in summer; but the most violent draughts are better than foulness. If the proprietor, therefore, on entering his stable, detects any stench, he had better order the horses out to exercise, and while they are absent have every door and window thrown wide open. After this has been done once or twice, the groom will take care the stable is always sweet, let the master enter when he may.

Every stable should be thoroughly drained, not into a neighboring cesspool, but to such a distance as will preclude any effluvia escaping into the building. Also all dung and litter ought to be carried far away from the place twice a day. This of course imposes extra work on those who are not very fond of employment, but our business here is to point out that which ought to be done, and not to please idlers.

The manger and hay rack are best low, as the last especially, being in this position, enables the horse to reach his food without raising his head and thereby injuring the vessels by maintaining an unnatural position, and likewise prevents any hay-seed falling into the animal's eyes. For the last reason, the place ought to be thoroughly ceiled, lest, any dust or litter fall down from the loft above, the hay in which, is likewise kept free from contamination arising from ammoniacal fumes, which always have a tendency to ascend.

The loose boxes ought to have their sides smooth, no nail or projection of any kind should be permitted, as the animal is apt to tear itself against such

substances. When designed as substitutes for stalls, it is sufficient to have partition close half way up, and the remainder formed of open rails, whereby the horses are enabled to see one another, and much of the dullness of their lives is removed. Every box ought to be drained by means of a centre grating.

It is a question much disputed whether the litter should be removed or not during the day-time. In the great majority it is entirely taken from the fore, and but a small portion left under the hind feet; and this method seems to be so good as to admit of no improvement as a general rule, though of course individual cases will require varieties in treatment.—“*Blaine's Outlines,*” by Mayhew.

CURE OF ITCH IN HALF AN HOUR.

Dr. E. Smith, at a meeting of the London Medical Society, called attention to an article in the Gazette Hebdomadaire, by Dr. Bourguignon, in which is a confirmation of the value of the treatment of itch, in Belgium, by sulphur, combined with lime in a liquid form. The remedy is prepared by boiling one part of quick lime with two parts of sublimed sulphur, in ten parts of water, until the two former are perfectly united. During the boiling it must be constantly stirred with a peice of wood, and, when the sulphur and lime have combined, the fluid is to be decanted, and kept in a well-stoppered bottle. A pint of the liquid is sufficient for the cure of several cases. It is sufficient to wash the body well with warm water, and then rub the liquid into the skin for half an hour. As the fluid evaporates, a layer of sulphur is left upon the skin. During the half hour the acarus is killed, and the patient is cured. It is only needful then to wash the body well, and to use clean clothes. In Belgium, the treatment is introduced by first rubbing the body for half an hour with black soap; but this does not appear to be necessary. The only essen-

tial act is that, of the careful application of the fluid sulphur. The lime is of no importance in the treatment, except to render the sulphur soluble, and such would probably be the case if potass or soda were employed. The chief point in the plan thus employed, which is an improvement upon the mode of application of sulphur in substance with lard, is more ready absorption of the remedy, and consequently the more certain and quick destruction of the insect, by using sulphur in a fluid form. In so disgusting a disease, it must be of great moment to be able to cure it in half an hour.—*Dublin, Med. Press, from Association Journal.*

This might prove very useful in the treatment of skin diseases occurring among horses. Who will try it?—*Ed. Veterinary Journal.*

HOW TO SECURE GOOD FRUIT CROPS.

The Agricultural and Horticultural Society of Vauchuse recommends, that in order to ensure a large crop in fruit trees, the following plan should be adopted:—A hole must be dug round the tree to a certain depth in the autumn, but not deep enough to expose the roots, and must then be filled up with manure; the manure should be left until frozen, and then be covered with the earth extracted. Thus covered over, the manure does not thaw until a late period, and thereby prevents the tree from budding early, and produces the effect intended. The same society further makes known that it is a well-ascertained fact that trees which yield most fruit are those whose branches grow horizontally, instead of vertically; and it therefore recommends that trees should, so far as possible, be trained to grow in that direction; it even declares that by such training trees that have never yielded any fruit previously may be made productive.

A MAMMOTH SHEEP.

The St. Lawrence American, of Ogdensburg, New York, says: "The

largest sheep we ever saw was on board the steamer *Northerner*, on her passage from Kingston to this port. He was but two years old, and weighed 315 pounds. He was an imported sheep, and was exhibited at the provincial fair at Kingston. A gentleman from Vermont had purchased him, and was taking him home. The price paid was \$315—a dollar a pound for mutton! What think ye of that, farmers of St. Lawrence? He was as large as a young steer."

FLY IN WHEAT—HOW TO DESTROY IT

We have heard complaints of "fly in the wheat" from farmers in nearly all the adjacent counties. The early seeded wheat and the warm weather that has since continued for weeks, has in the first place furnished the fly with good picking, and a good season for propagation. It is very desirable that this pest be cleared out at once, and destroyed, so as to prevent their reappearance in the spring. The Southern Planter recommends all who have this calamitous visitation to try the remedy proposed by Mr. Jas. A. Cochran of Augusta: sanctioned as it is by his experience of several years.

It is simply to apply from one to two bushels of water-slacked—not air-slacked lime per acre to the wheat, when the dew or other moisture is on the wheat, so that the lime will readily make a ley which will run down the groove of the blade to the midrib of the fly, or as it then is, maggot. The same application made in the spring if not found fully effective in the fall, Mr. Cochran found it to rid him entirely of this pest. The hands that apply the lime may handle it with impunity if they only keep their hands well greased. Mr. Cochran used small tins, like the dip-pers used for sugar and coffee by the grocers, to scatter it. But on land that will bear the tread of horses a broadcasting machine will answer much the best purpose.—*Fredericksburg (Va) Herald.*

Bacon vs. Pork.—Mr. W. A. Faison of this county gives us the following experiment on Bacon, which shows the difference in selling the live hog and making it into Bacon before it is offered for sale.

Mr. Faison killed 3 hogs on the 8th of Feb. 1856, Weighing gross 704 lbs. Net weight after cleaning 586 lbs.—The 18 Bacon pieces weighed 311 lbs. After it lay in salt 15 days it was washed, and weighed 413 lbs. It hung up and smoked, and on the 8th of Sept, it weighed 353 lbs., loss 60 lbs.

This Bacon sold in Clinton at 17 cts. per lb. The lard of the 3 hogs weighed 53 lbs. The heads 39 lb.

Pork sold at the time these hogs were killed at 9 cts. per lb. At which rate the three should have sold for \$52 74 cts. The Bacon sold for \$60 1 cent, besides the 53lbs of lard. Allow that the heads and haslets will pay for the salt and the extra trouble of making the Bacon and it will appear of the last season those who converted their pork into Bacon made a gain by the operation.—*Clinton Independent.*

THE CONDITION OF THE CULTIVATED SOIL OF THE SOUTH—ITS IMPROVEMENT BY SUBSOILING.

By THE EDITOR.

We have spent the days since we last held communion with our readers, in reflections upon the best modes of remedying the increasing sterility of our cultivated soils. It is humiliating in the extreme, to see no permanent fertility effected by improved methods of tillage upon our plantations. It is true, there has been some excitement concerning, and a considerable application of, *imported* fertilizers amongst the cotton planters; but, this will result in no enduring improvement of the soil, for the increased production will only serve to swell the amount of the exported material, taken from our fleece-bearing fields; whilst the practical operation of skinning the soil will be increased in the same ratio. We would

gladly see millions of tons of guano applied to the cotton fields of the South, if we could also see introduced, with this application, accompanying systems of deep and thorough plowing and subsoiling, so that whilst the stimulated over production of the soil was yielding its returns for the capital employed in the purchase of fertilizers, some regard was paid to the formation of a deep and perfectly pulverized soil, upon which the planter could rely in coming years. This alone can be effected by subsoiling—and we say so confidently, because reason, observation, and experience, point out this as the only mode by which the desired amelioration and improvement of most of our exhausted soils can be accomplished.—We know that we have prejudice, and ignorance, and that sanctity which the tyranny of ancient customs always intrude upon what are termed innovations, to contend with in our recommendations, but, nevertheless, it is our province to speak and reason in advocacy of our system, based, as it is, upon the most practical and convincing foundation. There has been progress in plowing as well as in mechanics—and in planting operations, the same. There is much to be learned by those who consider themselves most perfect.

Let us begin by statements of facts, and see what unbroken ground we have upon which to predicate our subsoiling operations. The average depth of the cultivated soils in the South, is not *three inches*. Below this, in the lower country, wherever there is not a deep, underlying stratum of sand, there is invariably a bed of hard-pan, which prevents the surplus water from descending, and the roots of the cultivated crops from penetrating. From the level character of this section, the surplus water does no damage by washing, but, collecting in partial indentations, forms ponds, scalded or sour places, upon which nothing but unprofitable plants of aquatic habits flourish. Upon the more elevated portions of the country, the dis-

strous effects of our sudden and violent rains are more apparent; for the underlying stratum being of stiff and compact layers, allows no precipitation of the surplus water, which finding a road downwards to accommodate its natural specific gravity, rushes down the inclinations of the hills, and, swelling into torrents in the vallies, sweeps off with each rain a proportion of the soil and its fertilizing constituents in solution, never to be returned by the ordinary processes of nature, and but too seldom by the assisting aids of man. A soil naturally wet, as well as one naturally dry, is thus frequently surcharged with an amount of water prejudicial to the production of good crops, from these causes alone. The common depth of till, as we have shown, is by far too shallow to allow the roots of our cultivated crops to penetrate below the influence of the droughts of summer, or our too dry temperature in the seasons of their growth. The examples of alluvial or bottom land, where the depth and permeability of the soil in all seasons, admit a growth superior to the other classes of upland cultivated fields, shows that we should attempt to make of our lands, and what they could be made by proper operations of subsoiling and manuring.

We have shown, in a former article, the fact that ammonia, the vital food of plants, is found in large quantities in rain water. We have just said that the superabundance of rain water, when uncontrolled, works great destruction on cultivated lands, by sweeping off the soil—the marrow of our soils.—What would be the effect if we were to break up the tenacious, impermeable, underlying stratum of clay—without turning up that clay to the surface—to a depth of one or two feet below our cultivated soil, by the practicable operation of the subsoil plow? Would not benefit be derived by thus loosening the subsoil, so as to allow the surplus water to descend, to be held in reserve for the after requirements of the crops, and at the same time storing up

the precipitated ammonia and gradually enriching that soil for after use? What would be the atmospheric influence of the soil? The frequent stirring of the soil is practical proof that the free admission of air to the roots of plants is of vital use to their accelerated growth, and this fact, though not reflected on by many of those who industriously stir the soil, is the secret of the true benefits derived from frequent tillage. Air rises readily through water, but it requires great power to force it downwards. The loosening of the subsoil allows the penetration of the air to the lowest limit to which the operation is carried; and this air there remains, until the atmospheric change of temperature above the surface, by natural laws, causes it to ascend, and it is at this stage that it works its benefits upon the crops and in dry weather invigorates them by furnishing to their delicate spongelets, or rootlets, the proper and invigorating food which it yields to them. We ask a simple question to make our position clear to the most simple reader: "If we place three inches of the best mould upon a hard, flat rock, would any such results as these follow, when crops planted on that stone required more moisture than was furnished by the falling rain?" The advantages of a deep subsoil, allowing the roots of the crop to descend as far as they can find congenial temperature and proper food in the soil, are incalculable; and again, this permeability of the subsoil, permitting the upward passage of water by capillary attraction, affords a double protection against drought. Here the bigot may attempt to stop me by saying, "*Water only finds its true level*;" but this received law of nature is exploded by placing a sponge upon a shallow vessel of water, or referring to that system of irrigation so common in the cultivation of pot flowers, where all the necessary moisture to support even gross water-feeding plants, is derived through holes in the bottom of the pots, from saucers and which is freely drawn up from six to eighteen inches by this due-

tile power residing in disintegrated mould. The subsoil of our fields is usually too compact to admit either the downward or upward passage of water, and there are, no doubt, innumerable locations all over the State where the surface is parched, so as to preclude vegetable production, whilst the simple operation of breaking up the subsoil would, within in a few inches, release a deposit of moisture which would gladly rise to the sunlight, and relieve that unsightly sterility above. A uniform system of shallow plowing has a tendency to create a crust upon the bottom of furrow, which is extremely prejudicial to vegetation, and, aside from the mechanical effects upon the soil, and resulting from subsoiling, the chemical action produced by the introduction of atmospheric influence below the surface soils, and the gradual exposition of their locked up ingredients to this influence, is extremely beneficial.

When we have a depth of earth broken up and properly pulverized, it is reasonable that, even if it is termed poor, it will, by allowing wider range to the roots of cultivated crops, greatly increase their production. The practical examples of the rampant production of weeds and briars—requiring good soil to induce luxuriant growth—which are to be seen on the clays thrown up and exposed on our railroad lines, is convincing proof that *deposited red clay* itself is rich in fertility, when subjected to the proper treatment. Clays, too, hold in solution, with so much tenacity, the essentials of improvement by manuring. The operation of subsoiling is simple, and, if properly done, always effective of beneficial results on any soil. We believe it essential to all soils, and from experiments, intend to extend our operations in this line, until every foot of land we cultivate is subsoiled; and when we have accomplished this, we will commence again, and add a few inches more to the depth of our soil by repeating the operation.

S. C. Agriculturist.

GRAPES AND WINE.

The quantity of delicious fruit which we have gathered during this and the two previous season from a Scuppernong Grape Vine planted eight years ago, has caused some wonder in our own mind that we did not sooner provide so great a comfort and luxury. And that such of our readers as have a small space of ground to spare may profit by our experience, we hereby call their attention to the subject. The vine we speak of covers a space of about 30 by 15 feet, all of which is the growth of eight years. And for the last eight weeks it has afforded an abundant supply of fruit for consumption, morning, noon and night. It is, we suppose, a peculiarity of these grapes that they continue to ripen for so long a period, and are thus the more valuable as a table grape. The quantity of fruit is very remarkable. A friend in this vicinity mentioned a few days ago, that from his vine, which is older and larger than ours, his large family had eaten for weeks, they had given to their neighbors, and sent off boxes full to their friends in the back country, and yet his wife and two small servants had in two hours gathered enough to make 27 gallons of wine. He and two of his friends are looking around for a suitable tract of land in the neighborhood of town to plant a vineyard on a large scale, for the purpose of making wine. It has been one of our cherished ideas, for thirty years past that these sand hills will at some day be extensively devoted to the cultivation of the vine. Of course the scuppernong, an indigenous grape, will be most cultivated; but other kinds will be introduced, as they may be found suited to the soil and climate. Some good wine is now made throughout the Eastern counties of the State; but there is a great lack of skill and experience in the fermentation and in the proportion of sugar and spirit mixed.

We believe that the vine may be planted either in the Fall or Spring. It grows rapidly and is long lived. Requires, of course, a frame work, strong

but no matter how rough, to support it. An idea prevails that if trimmed it will bleed and die; but we understand that it may be safely trimmed to any extent after the leaf is matured.

The proper way is to get a root from an old vine (which may be done by *layering*.) Vines may indeed be obtained from seed, but they do not produce the same kind of grape—it is black and thick skinned, whilst the other is russet and thin. The flavor is likewise somewhat different.

Again we would advise our readers to plant a Scuppernong vine.—*Fay. Obs.*

The fruit from the seed varies. We have known the pure scuppernong raised from the seed.—*ED. ARATOR.*

ORIGIN OF THE "CHEROKEE," AND SEVERAL REMARKABLE EXAMPLES OF CHANGES IN THE POPULAR NAMES OF PLANTS.

BY "NATRIUM."

For the following facts in relation to the origin of the "Cherokee Rose," we are indebted to the manuscript notes of one of the oldest Naturalists in the United States. We have thought it well to put them on record in some more permanent form, before they shall have been entirely lost.

The species of Rose described by the late STEPHEN ELLIOT, as the *Rosa laevigata* of MICHUX, was first sent to this country from England by the Messrs. LODDIGES, to the late Dr. T. J. WRAY, of Augusta, Georgia, as an undescribed species from India. By those to whom Dr. WRAY presented specimens, it was called the "*nondeript*." It did not retain this name long; but as shortly afterwards called the "Choctaw;" then the "Chickasaw," and finally the "Cherokee Rose." It is by no means certain that it is MICHUX's plant; as that is said to have from three to five leaflets in each leaf; whereas, the plant under consideration has almost uniformly but *three*. It may sometimes have *five*, but we have never observed it with this number; sometimes there are two or even *one* leaflet, but these are anomalies not to be taken in consideration in the description of the plant. It has been used for many years, in the low-country of South-Carolina and Georgia, as forming an impenetrable hedge, and has become *asi-indigenus*.

Most Botanists have regarded it as a native plant. ELLIOT very justly remarks, that, in its habit and appearance, it has very little resemblance to any of its indigenous congeners; and TORREY and GRAY observe, that it is obviously a plant of Chinese origin, which has become extensively naturalized. To the eye of an experienced Botanist, its Asiatic physiognomy is striking and unquestionable.

The entire oblivion which envelopes the introduction of this plant into our country, and the repeated change of name which it has undergone, is a striking instance of the little attention paid by Americans to the preservation of traditional facts, and the small reliance which we can place upon the reports of those who attempt to tell of things which happened even in the last generation.

A similar change of name has taken place in the *Melia azedarach*—the well-known southern shade-tree introduced from Persia. It is remembered when this tree was universally known as the "Asidera,"—a corruption of its true name, still retained by the negroes on the sea-coast in the word "Ashinderi." It was afterwards generally called the "Pride of India," then the "Pride of China," and finally the "China tree." Many years ago, a physician of an adjacent State published an account of his having administered a preparation of the *Melia azedarach*, as the "*Radix chinæ*," or root of the *Smilax pseudo-china*!! This last plant from having been called the "China brier," is known almost everywhere as the "Bamboobrier."

As a parallel instance, illustrative of the confusion of names, we may mention, that, not many years ago, a paper was published in a respectable southern medical journal, giving an account of the medicinal properties of the "Yellow Jessamine" (*Gelsemium sempereirens*) under the name "*Jasminum revolutum*!!!" This name has been *manufactured* from a combination of the popular appellation, with its well-known climbing proclivities; for there is not a single plant belonging to the *genus* *Jasminum* to be found indigenous on the continent of North America! In this instance, the addition of the popular *synonym* (Yellow Jessamine) enabled us to identify the plant whose virtues were unfolded; but what confusion must have been produced in the minds of the European Botanists and sons of *ÆSCULAPIUS*, when they read this contribution to medical literature!

We have already alluded to the fact, that the "Cherokee Rose" is used for hedges by some of our low-country planters. It seems to us, that its great value in this respect, has been too much overlooked and that it should come into more general use on southern plantations. Many years ago, ELLIOTT expressed a similar opinion. He remarks, that, "In our rural economy, this plant will one day become very important. For the purpose of forming hedges, there is perhaps no plant which unites so many advantages. For quickness of growth, facility of culture, strength, durability, and beauty, it has perhaps no rival."—(ELLIOTT'S BOTANY.) To this combination of valuable qualities, the experience of some of our intelligent planters will abundantly testify. Within the last twenty-five years, on some plantations near the sea-coast, it has been extensively used for hedges. It readily grows from cuttings, which being inserted along cheap temporary rail fences, will, in the course of a few years, form a continuous and impenetrable hedge. To secure certainty in the growth of these rose cuttings, it will be found advantageous to insert them into earth which has been *recently turned up*. The slight embankments which are frequently thrown up for marking the outlines of separate fields, are admirably adapted for this purpose. When *freshly thrown up*, not one rose-cutting in a hundred will fail to take root and grow. It requires but little care in the management and preservation of these hedges. During the latter part of Spring, it is frequently necessary to restrain the tendency to *spread* by means of the vigorous lateral shoots, which sometimes extend out ten or fifteen feet.—This can be readily accomplished by bending such shoots towards the axis of the hedge, by means of a long bifurcated pole.

During the flowering season, a plantation thus hedged presents a most striking beautiful spectacle; the lines of hedges assuming the aspect of immensely extended embankments of cotton-wool, from the millions of white flowers with which they are covered. At other seasons, the deep verdure of this ever-green is scarcely less beautiful, although, perhaps, less novel and remarkable. It endures our severest winters, although, sometimes, the young and tender shoots are blasted by our spring frosts. In relation to the *durability* of these hedges, the experience has not been of sufficient duration to furnish a satisfactory test; but we have known those of twenty-five years standing, which are now quite impenetrable.

We are acquainted with no plant which forms a hedge so *unapproachable* as this rose. Its formidable thorns render it the terror of such animals as attempt to force their way through its compact interlacements; while to the smaller animals, such as rabbits and rats, it affords a secure retreat from their enemies. Indeed, the only objection we have ever heard urged against them, is, that they are harbors for wood-rats, which sometimes make considerable inroads, on the *cereals* which may happen to lie on the borders of the hedges. On the other hand, these hedges afford, as far as we have observed, the only efficient barriers against the incursions of the herd of omnivorous *quadrupeds* which infest our country.

S. C. Agriculturist.

THE USES OF PLASTER OF PARIS AND CHARCOAL, COMPOSTS, &c.

BY THE EDITOR.

* We have recently received several queries respecting the proper mode of using Gypsum or Plaster of Paris, and as it is so intimately connected with the proper application of Guano, we deem a reply, incorporating its constituents and properties, necessary at the present season of the year, when our improving planters are about to apply so much of the popular fertilizer to their corn and cotton crops. We cannot fail to press the claims of charcoal, as a powerful absorbent of ammonia, in the proper place. It is composed of sulphuric acid and lime, and is styled sulphate of lime. Its power as an absorbent of ammonia are so general and so well known, that it is now used to a great extent by economical farmers in sprinkling over their stable floors and barn-yards. LITERÆ says, "One hundred and ten pounds of burned gypsum fixes as much ammonia in the soil as six thousand eight hundred and seventy-seven pounds of horse's urine would afford to it." This shows its great value as an application in all cases where ammonia is likely to evaporate, and it would be a good practice to sprinkle all animal manures with gypsum preparatory to moving or in any way disturbing it. Gypsum has the power of fixing the ammonia, and when it is no longer volatile, it becomes an assimilating agent of plants. How necessary, then, to fix it in the soil to be evolved as the growth of the plants require it? A much smaller quantity of gypsum than is usually applied as a mixer with guano, we believe, would answer as good a purpose. We think the gypsum

applied in the ratio of one to four of guano, would be sufficiently effective in its operation to fix the ammonia contained in it. Plaster possesses many chemical qualities useful to the soil, and its mechanical effect is always beneficial when applied, as it prevents particles from settling together, and facilitates its thorough disintegration.

But when we speak of charcoal, we wish our readers to ponder well upon the uncontrovertible arguments we will write down in its favor. In a pulverized state, it is the most useful absorbent of ammonia known. It is capable of receiving *ninety* times its bulk of ammoniacal gases, and, from its free and yielding nature, throws it off to every shower of rain. Plaster, on the other hand, requiring *four hundred* times its weight of water to dissolve it, is not so rapidly available, and frequently, especially in dry seasons, exerts but little fertilizing influence. Wherever there is an abundance of carbon (charcoal), there is no use for gypsum. It is the best dressing we can give to the floors of our stables and the surfaces of our manure lots; and all soils liberally supplied with charcoal in a state of sufficient division, possess elements of gradual improvement, which cannot be stolen from them by bad systems of tillage.—We believe that if the primitive growth of trees on new lands were reduced to charcoal at the first clearing, and the whole applied to the soil and thoroughly incorporated with it, that soil could always be easily rendered productive. The amount of ammonia fixed from the rain water alone by this charcoal would constitute powerful fertilizing elements for the production of crops. We think we hazard nothing in asking all our friends who use guano, to add to it as much charcoal powder as they have at their command. It will render the guano more effective, and its own properties should not be undervalued. When we have a cheap and powerful fertilizer at our own doors answering fully the purposes of others brought to us at great cost of transportation, we should always use the domestic article. Of the certain efficacy of charcoal, we have no fears, for it is pure and unadulterated; but much of the gypsum sent to the South is a gross cheat, and contains but a small per centum of sulphate of lime. White clay, calcined, and magnesian earths, abounding all over the country, are used in this business of manufacturing merchantable gypsum. To guard against these deceptions, we should have in every sea-port city, an inspector of manures, capable of detecting these frauds committed on

the planters of the country.

We append a capital article, which we take from the first volume of *Mares' Working Farmer*, entitled—

“EXPOSURE OF MANURE IN BARN-YARDS— MAKING OF COMPOSTS.

“We once had an eccentric friend who insisted upon wearing the nay, or soft side of his stockings towards his foot, or what is usually called *wrong side out*. He insisted upon it, that the stockings would wear for a longer time, and that, as he had more respect for his foot than his boot, he should so continue to wear his stockings. When asked why others did not follow his plan, he answered, that they followed example rather than to take the trouble to think. Is it not so with our farmers, in permitting manures to lie continually exposed on the surface of an open ground? When they cart out manures to spread on ground before plowing, they are always anxious to spread no more than they can plow under the same day, to prevent loss by evaporation. And not only do they lose the volatile part of the manure by such exposure, but by the treading of the cattle upon it is continually displacing atmosphere from between the particles, and enabling new quantities to enter for further evaporation. All the liquid manures are lost at an accelerated rate by being kept in continuous motion, not only by the feet of cattle, but by capillary attraction from straw, corn stalks, &c. Notwithstanding that it has been clearly established that 75 per cent. of the value of manures is lost by such treatment, still the treatment is adhered to without change. Instead of such exposure and loss of manures, why not build sheds facing the barn-yard to hold manures, and throw the quantity produced under these sheds each morning before the sun has had full power upon it, and by there mixing it with muck, headlands, or any other divisor, increase the quantity of manures, in addition to the saving of 75 per cent. by preventing evaporation. Every one who has tried it, knows that one load of fresh manure mixed with several loads of muck, or even headlands, under covers, will cause each load of the mass to become equal to its bulk of clear manure for purposes of fertilization, and that this arises from the escaping gases given off from the manure during fermentation, being absorbed by the divisor; and still we see farmers continuing this barn-yard deposit, notwithstanding the fact that in many cases they are compelled to buy manures in the spring.

Let them, if they will continue the barn-yard system, at least throw muck, charcoal dust, gypsum, or all three of them, on the surface of the ground each day after cleaning up the yard, and thus save a larger proportion of the liquid manures by retaining the ammonia. We have found that by placing proper absorbents in our ox, cow and horse stables, so as to receive the fluid manures before they lose the animal heat, that eighteen loads of muck may readily be used with every load of fresh manure, thus giving us nineteen times the bulk of manures that we should have on the old system, and even with such divisor the heat of our manure heaps is fully sufficient for the purposes of decomposition; but our cattle do not run at large in a barn-yard, nor do we believe it is necessary for their health that they should do so. For working cattle, certainly, exercise is unnecessary, as to air, a well-regulated stable, having no escape gases from manures, will furnish better air than a putrid and offensive barn-yard. If the object be to fatten cattle, it has long been decided that they fatten more readily without a continuous motion than with it; and for milch cows the stall system cannot be doubted as being the most economical, both as relates to the quantity of milk and food, as well as in the saving of manure.

A moderate quantity of salt should be used in the manure or compost heap. It is well known that although a large quantity of salt will prevent active fermentation, still a moderate quantity will accelerate decomposition, and at the same time destroy the seeds of many kinds of weeds, grubs, &c.

Farmers who raise wheat, rye, corn, oats, barley, clover, turnips, and potatoes, should either have in their soil, or add to their compost heaps, a variety of inorganic ingredients which these crops contain. Thus, if after having an analysis of their soil, they should find it to contain potash, soda, lime, magnesia, phosphoric acid, sulphuric acid, soluble silicates, chlorides and azotized matters, there they may raise any or all the crops before named, by only adding so much manure as will supply the carbonaceous substances required, or if the soil be well tilled, this carbon will be supplied from the carbonic acid of the atmosphere.—But should any of these ingredients be missing from the soil, and not be contained in the manure used, the crop for which it is required cannot possibly succeed, however rich the soil may be in other ingredients.

After ascertaining in what the soil is deficient,

the farmer can readily supply it in the compost, and generally from cheap materials; thus, potash from ashes, soap suds, &c., soda chlorine from dirty salt or the salt ley (soapers' waste,) of the soap boilers; sulphuric acid and lime from Plaster of Paris; phosphoric acid from bones, and a small portion is contained in shell lime, night soil, and indeed most animal matters will supply both phosphoric acid and azotized matter. Soapers' waste is rich in the soluble silicates, or if the compost contain excess of alkali of any kind, the silic of the earth will be combined with it, and thus be rendered available for the use of plants."

S. C. Agriculturist.

ADDRESS OF PROF. MITCHELL,

At the State Ag. Fair, 1856,—[Concluded.]

For if vegetables, the crops which we cultivate and raise, are composed of the elements of water, which they can easily procure, which we can supply if they are so in want that there is an absolute necessity for it; and if carbon, which they get from the air, all they can possibly want is a soil of almost any sort in which to obtain a foothold and raise themselves up so as to place themselves under the genial influence of the atmosphere and the sun's rays. Why then should there be a difference in soils? Why should not one be as good as another? For a long time we were unable to assign any satisfactory reason. One class of men—one profession was as much in the dark about the matter as another. There was a mass of facts to which was given by courtesy rather than because they had any valid title to it, the name of agricultural chemistry. It was not, in fact, entitled to the name, and for a number of years I was accustomed to deny that there was any such science as agricultural chemistry. In the year 1812, or 44 years ago, Sir Humphrey Davy, at the instance of the English Board of Agriculture, delivered in London a course of Lectures, which were afterwards published, on this subject. They were written with the elegance and precision which characterize all the productions of his pen, but so far as the information they contain and the new facts they furnish are concerned, they are of no considerable value. The proof of this is to be found in the fact that the interest they awakened was only temporary: it soon died out, and the whole subject lay neglected for a number of years. An intelligent friend of mine, in the soundness of whose judgment, as well as in his general fairness, I have great confidence and who had at least, paid great atten-

tion to the subject of agriculture, told me that after reading Sir Humphrey's book carefully through, he seemed to have gleaned out of the mass of chaff of which it is in the main composed, one idea both valuable and new, and no more. Some exaggeration it may be believed, there was in this statement, but the worth of the contributions of Sir Humphrey to agricultural chemistry, it will I believe, be conceded on all hands, was very inconsiderable.

At length, men in groping about in the darkness began to feel the truth and to lay hold of it, and though from want of the needful books of reference, I cannot speak with perfect confidence, I am of the opinion that not only to the Germans in general, but to Springel in particular, the larger part of the credit connected with the more recent discoveries in this field of science, and with the new views that are taken, is due. Another prodigious stride, and one of great importance, has unquestionably been made, and its importance depends upon the fact that it is in the right direction. We are placed by it in a condition not only to correct our own theories, but also to *improve our practice*. There is a science of agricultural chemistry now, and its teachings are of immense value. I have, first of all, to state briefly but distinctly what they are.

When vegetables are burnt they leave a quantity of ashes behind them. The pine tree is almost an exception, for when we burn it the quantity of ashes procured is inconsiderable. With this fact its capacity of growing slowly indeed but with a degree of vigor even upon the sand hills that are barren for almost everything else, has probably a close connexion. Vegetable matter generally, leaves a considerable quantity of ashes. Is this what Tall supposed?—merely some fine particles of common earth, or have ashes a peculiar constitution of their own, and one that is different for each peculiar kind of vegetable growth, and does the matter contained in these ashes play an important part in the economy of every plant? These were the questions to be asked, and the answers that have been received are so deep and important significance for the agriculturist. With the truths they state, his mind should be very thoroughly imbued; they should be perfectly familiar to him. There are a few chemical compounds that, as they are always found in its ashes, appear to be essential to the healthy and vigorous growth of each plant, so that if they are present in suitable quantity in a soil, and there is no other hindrance, that will be a fertile soil for the vegetable in question. These indispensable requisites of

fertility are few in number; they are required by nearly all, absolutely of the plants we cultivate, though not by all in the same proportion and in an equal degree. They are potashes, of that substance in common which communicates to it the property of forming a soap when boiled for sometime with an oil or with tallow; soda, which is nearly related in its properties to potashes; lime, magnesia, silica or the earth of common white flint, phosphoric acid, and sulphuric acid.

Now it is remarkable with regard to two of these substances so indispensable to vegetation, (potashes and phosphoric acid) that they are everywhere and nowhere. A proof it is of the existence of a wise and kind intelligence that presided over the creation of the earth and all that inhabit it, and that he has ordered all things well. They are diffused in *small* quantities and proportions through all soils, whilst there are few if any extensive and rich mines of them from which they may be extracted and strewed over the surface of our fields, so as to create in them all a fertility which is not native and natural. Wherever there is one of those blades of grass on which our domestic animals feed, or a stalk of wheat which brings a single grain of seed to maturity, there are potashes and phosphate of lime in the soil. The quantity especially of the last named substance may be very inconsiderable, so small that the analytical chemist who has a parcel of that soil under examination, will with difficulty, if at all, be able to separate and weigh it. The entry in his note book may be—phosphoric acid—a trace, whilst from a stalk of wheat we obtain a statement considerably different. There is certainly no superfluity of phosphoric acid, the wheat stalk would say, in that soil, yet I found enough to meet my immediate necessities, as if you burn me, stem, blade and grain, and proceed to analyze my ashes, you will readily discover.

The fact that these few substances are always found in the ashes of vegetables, seems to furnish decisive proof that they play an important part in the economy of the plant, and are essential to it, as they also are, the greater part of them, to animals of different races and kinds. Of the particular uses of each, and what changes are accomplished through its agency, we are wholly ignorant. It is one of the secrets of the Deity, from over which he may never permit a human hand to lift the veil; but in the mean time, we shall do wisely in applying for our own advantage the knowledge we have already acquired. I recapitulate therefore, the facts to which your attention is more particularly invited once more.

Potassa or potashes, as they commonly call it in

the market, and phosphate of lime, are found to be contained in the ashes of all or nearly all the vegetables we are in the practice of cultivating in this country, from which we infer that if not absolutely indispensable, they are very important and useful to the plant, and when they are present in considerable quantity in the soil, promote very greatly its fertility. This is not mere speculation and theory, but it has been fully established by experiment. Fields that were utterly barren, and in the soil of which no phosphate of lime could be detected, on receiving a generous application of that substance, have yielded abundant crops. These two precious substances exist in small quantity in the soil of North-Carolina, and in every part of it, in the east and the west, in every county, on every plantation, on the surface, and at all depths. But here I shall perhaps be met with an objection. Of what use is your chemistry after all? You tell us that you have found out that these substances are absolutely necessary, indispensable to plants—that they are everywhere and nowhere—everywhere in small quantities—whilst there are few if any extensive and rich mines of them. Of what advantage, then, can it be to us to be advised of the important part they play in the vegetable world. Your information is just about as valuable as would be that of the physician who, coming to the bedside of a patient should tell him, that he knew what was the matter with him, understood his disease perfectly well, and could relieve him with ease, if he could only furnish himself with the appropriate remedies—but unfortunately these were at present, nowhere to be obtained. Just as you tell us that our soils are, or may become diseased—that you know what medicine must be applied to restore them to sound and perfect health, but are silent about the place where, or the methods by which, they are to be procured.

It is not to be denied that there is some show of reason in these objections. But they may be met so far as the claims of chemistry, and the question respecting the benefit conferred by her upon agriculture are concerned, by certain counter-statements.—If we cannot accomplish all that might be desired, we can do something. We can suggest the erection of a bone mill in each county so as to make the best and most economical use that is possible of the small amount of phosphate of lime we have already at our command—we can recommend the most careful search amongst the shell limestones of the low country for masses containing an available percentage of this precious substance. And finally, we can warn our fellow-citizens of the danger of permitting whatever stock we now have of these constituents of a rich soil, to run to neglect and waste.—I think I can satisfy any one who will follow a fair

and honest argument to its legitimate conclusions, as part and parcel of his belief, that these invaluable substances are contained in larger proportion in what we commonly call the soil as distinguished from the subsoil, than at any other point that is within some five feet of the surface; and the use I intend to make of this fact is to press upon the farmers of the State a more diligent use than has hitherto been made in North Carolina husbandry of all the means at their disposal, and especially hill side ditching and horizontal plowing, as the only means they have of perpetuating the fertility of the fields they cultivate. I know very well that these are agricultural operations which are faithfully attended to by some few individuals. My object will be to show that there is reason in the methods they employ; that it is no humbug which we recommend and induce as many persons as I can who cultivate rolling or broken land, to adopt the practice.

North-Carolina, at the time the white man first made his appearance on the western shore of the Atlantic and the Aboriginal Indian was its only inhabitant, was covered all over, as it had been for ages, with a continuous forest. Not exactly such a forest as is now seen through those parts of the county of Wake, for example, which have not yet been cut down: the large trees were more thinly scattered, presenting somewhat the appearance of an orchard. This feature of the original landscape has not yet been altogether obliterated in some of the extreme western counties. The large trees threw out their roots in every direction in search of the food, the mois ure, and earthly salts especially, which were indispensable to their healthy and vigorous growth. The tap root goes directly downwards, giving off its branches, and the small rootlets penetrate sometimes to a depth of ten, twelve and fifteen feet. They are in search of potash, soda, lime, phosphoric acid, sulphuric acid, and a few other things, which they collect and carry up so as to be deposited in the trunk, limbs and leaves.—When those woody matters perish, whether in the natural course of decay or by being burnt, upon the ground, the precious elements of fertility that have been extracted from the subsoil, and from that which lies at a considerable depth, have been brought up and incorporated with the vegetable tissue, are liberated and mingled with the top soil.—They are likely to be dissolved again to a certain extent by the rains that fall, some part of them is carried off to the ocean and irretrievably lost, some is soaked up and sinks to certain distance into the ground, but a large part remains at or near the surface, helping to constitute what we call the soil.—The principle for which I am contending is simply

One that is well understood by many persons, but not brought out with the distinctness in which, from its importance, it merits to be placed. That the soil from the course, and in consequence of the events and changes by which it has been formed, is necessarily richer in the elements of fertility than the subsoil, and that the existing upper soil, is therefore to be retained in its position by all the decent and honest methods we can employ. Amongst these, *hill-side* ditching and horizontal ploughing appear to me to hold the first place. The deep subsoil has been in a course of impoverishment and the surface soil in a course of enrichment for ages, and what the final results of such a process are likely to be, I suppose it requires not the wisdom of a Solomon to determine and decide. What we need at this time, as it appears to me more than anything else, in agricultural chemistry is, a long series of analyses, extending not laterally but vertically, not an account of the composition of a parcel of soil taken in Edgecombe, and of another from Rowan; but the same thing for parcels from different depths. Suppose a deep well to be dug here in Raleigh, and the earth examined, which is taken, *at the surface*, and at the depths of 4, 8, 12, 16, 20, and 24 feet, till we came to a point where the decomposed rock differs but little in constitution from such as is still solid. The information afforded by such analyses would be valuable, inasmuch as, amongst other things, it would settle definitely the question in relation to the safety of such kind of deep ploughing, as shall bring the *deep* subsoil to the surface, whilst that which had been at the surface is buried where the roots of plants will hardly reach it.

Most of the farmers whom I have the honor to address know very well what is meant by a gully or a galled place in a field. This last name is well applied. They are spots as unsightly, and uncomfortable, as those upon a working animal, from which the hair has been rubbed off, and the skin chafed and fretted, until it has become tender at least, if not sore. A person unacquainted with farming, who visited a large field or farm, that was in this condition, would be inclined perhaps to think very highly of it. The sides and bottoms of the gullies and washes, would be seen to have a rich, ruddy color—the earth itself to be tolerably mellow and pliable. I will turn in there, he would say, with a good sharp, heavy plow, break it up well, and show these stupid farmers how to raise corn. And those same farmers whom he characterizes as so stupid may be expected to watch with some degree of malicious pleasure the result of his operations. Such gullied and galled places, if not ab-

olutely immedicable and incurable, are exceedingly difficult to be nursed into fertility. Differences unquestionably there will be in different places and counties depending upon the kind of rock that underlies them. I am speaking of what is most common and general. And we can see the reason why these things are. The surface that is in these cases exposed, has been previously plundered and stripped of its potassa, soda, lime and phosphoric acid, by the trees which once grew just above it, when there was a soil above it: and now that the elements of fertility have been taken away, we need hardly wonder that it is barren.—The sandstone that lies east and south of the University has extensive and valuable low grounds along the streams which flow through it. When these are cleared and brought under cultivation, it sometimes happens that a particular part, which produced well at first, is so situated that high freshets, as they occur, sweep off the whole of the upper surface or soil. The subsoil which is thus uncovered and brought up to the light of day, has about as inviting an appearance as the rest of the field; in color, texture and other sensible properties, it seems to be in no degree inferior. Yet while those other parts are beautiful with luxuriant crops, upon the wasted portion, even the weeds and wild grasses will hardly take the trouble of establishing themselves. No amount of culture—meaning by this a simple stirring of the ground—will render them productive. They must have added to them those elements of fertility of which they have long ago been deprived.

It will be understood that it is my purpose to compare the chemical constitution of the surface soil only with that of the subsoil through a few feet below, or as far as the forest trees reach, not with that of the earth which has resulted from the decomposition of the rocks at the depth of 25 or 30 feet. This last may be superior in its adaptation to the nourishment of vegetables to the surface soil; so that if a layer of earth two feet in thickness, could be brought at once to the surface from that depth, throughout the whole of Wake Co., it would be rendered so far as its capabilities for agriculture are concerned, a richer county than it now is. Some experiments on the earth brought up from the bottom of deep wells, upon the discussion of which I have not time to enter now, have seemed to point in that direction, and to warrant the belief that in some future, *very remote*, age, men may be driven to the task of tunneling the hills, to derive from them the means of

providing for themselves—the necessaries of life—that they will then mine to obtain a virgin soil, as they now do for silver and gold.

Some facts stated by Dr. Lyell, in his principles of geology, respecting certain lavas on the Island of Ischia, which lies in front of the bay of Naples, lend a degree of probability to what has just now been suggested. These lavas appear to have been poured out of the bowels of the earth, somewhat more than 2,000 years ago; they have undergone a rather rapid decomposition, and produced a soil of the most exuberant fertility. Lyell visited the island examined it in person in the year 1828. "Such," he says, "is the strength of the virgin soil, that the shrubs have become almost arborescent; and the growth of some of the smaller wild plants has been so vigorous that botanists have scarcely been able to recognize the species." Like this, other parts of earth may have been, when they first came from the forming hand of their Creator; and in particular that region, eastward, in Eden, where the Lord God planted a garden, and put there the man whom he had formed.

But these are matters of mere speculation, and our subject is, or should be altogether practical. My main object has been to show that the operation of hill side ditching (already in use amongst many of our planters and farmers) is as reasonable and sound in theory as it is found to be beneficial in practice; and to recommend its adoption by all whose lands are in any considerable degree rolling or broken. And I have been the rather led to the selection of this topic, because it is an improvement that is within the reach of all persons, as well those of small capital, and who have but little ready money, as the men of ample means; of the farmer whose possessions are remote and difficult of access, so that he cannot readily and easily supply himself with foreign fertilizers; as of the amateur agriculturist here in Raleigh who, by the profuse employment of guano, poudrette and superphosphate of lime, has bloated his field into a sickly show of fertility which does not really belong to it. My object has been to benefit a little, if I could, *the masses*—to call their attention to the means of transmitting to the next generation the soil of North-Carolina, little if at all injured by the culture to which we have subjected it. It is a contribution which every good citizen may be expected to make to the public weal, especially, as the expense of time and labor, on a plantation of moderate extent, is so comparative-

ly inconsiderable. But little direct, positive good not much *increase* of the "returns," his fields yield, is to be expected. Its object is rather the prevention of mischief and evil. If the valuable results of its adoption are not witnessed, the opposite effect of it will be likely to render itself very distinctly visible, and will be felt in the diminished value assigned to his possessions by all who are acquainted with their history.

And having ventured to point out the duties of such as farm in a small way, as well as of others, may I also be indulged in a suggestion in a single particular for their benefit in relation to the prizes that are from year to year to be adjudged here for excellencies of any kind. *That their effect be to call into existence the exact kind of improvement, the country from the characters of its climate and soil most needs, as best adapted to its actual condition and no others.* In England they have succeeded by long, patient and skilful attention to the subject, in carrying forward certain breeds of *sheep* to a high degree of perfection. These races are suited to the circumstances of that particular country, to the climate, the kind and quality of the food that is furnished there for this animal, and the condition and wants of the people. One of the animals that is of first rate importance here is the hog, which constitutes so large a portion of our food, from year to year; and we need for the uses we make of him not *any* kind of hog that may happen to turn up—not the hog that is most esteemed and has the highest value placed upon him in England, Germany or the Northern States—but a genuine North-Carolina hog, native born and bred, whose desirable characters I will proceed very briefly to specify.

An English or German hog is an idle sluggard, as well as a glutton, from the time when he is littered till he feels the butcher's knife. He lives in a pen or in a field or lot of small dimension, and does nothing but eat. He is a kind of machinery for converting vegetables and grains of different kinds into pork. Amidst our great extent of land unenclosed and still in forest, the North-Carolina hog is and should be a very different kind of animal. He has almost as much mind as some men and women that I have seen, and this is one of his prime accomplishments. In a country that abounds in worms, weeds, acorns, and other mast, he is with good reason expected to be enterprising and industrious—to shift for himself. If I know of one that has ingenuity and audacity in getting through or over a fence into a

corn field and helping himself there, I respect him the more on that account, and when he comes to be brought upon the table, I find his bacon the more savory and luscious for that very reason.— But this is not all. There are some men, who, if you stuff them with seven pounds of fat beef a day, will be like Pharaoh's lean line, even if they are not mere walking skeletons. It is not in them to thrive and grow fat. On the other hand, we meet now and then with an old woman, who if you supply her with corn bread, and give her water that is well peopled with tadpoles and other reptiles, the larvæ and eggs of insects will expand and eggs of insects will expand and swell out infinitely. It is the same with regard to the hog. It is the same with regard to the hog. I mean to say there is the same kind of difference between individuals and races.

A Chatham man, some years ago, as I was returning from Pittsborough to the University, took me around to see a sow and her litter of pigs, belonging to him, and which he proposed to sell me. As they appeared to be healthy and he commended them highly, I made the purchase. Things went well enough till the pigs were grown and were shut up in the latter part of October to be converted into pork. I then found that I might just as well attempt to fatten the same number of pine shingles. Other hogs, unlike these, show a disposition from their piggood to laugh and grow fat. These, if they are also industrious are the kind for North-Carolina, and many thousand dollars may unquestionably be saved in the State every year, by the gradual formation through a careful attention to this subject and repeated trials of a breed of this kind. To expect that any hog will fatten on absolute starvation, is unreasonable but we want such as will make pork with the smallest possible drain upon the corn crib. When, therefore, this kind of stock is offered in competition for any kind of prize, the judges should, in my opinion, pay some regard to the intellectual and moral character, as well as the form and size of the animal. The history of his past life should be called for. What part of the bone and muscle & fat that is here has been gathered out of the woods or stubble field, and how much is the result simply of high feeding? And according to the answers returned to these questions, should be the awards.

Gentlemen of the Committee, in answer to your call, I have come to discharge as well as I could the duty assigned me, and read in your hearing what had been prepared under the pressure of

other engagements and with many interruptions. I think it well that there should be an annual address on these occasions; not that very much that is new, and on that account valuable, will be brought forward on an art, at least, if not a science, as old as agriculture. But it serves as a decent introduction to the business that is to succeed it. I expect much more from the intercourse of gentlemen engaged in agriculture, and the interchange that is made of opinions on the best objects on which to bestow their labors, on the best methods of tillage, and a comparison of the products of different regions and counties. It is on agriculture, unquestionably, that the wealth and prosperity of North-Carolina and the comfort of its population depends, more than upon any other material thing that can be named. It must, therefore, be regarded by any person of moderate intelligence as a privilege not less than a duty, to contribute as I do this day, his mite to that with which the public and private prosperity is in such manner and so intimately connected.

COOKING WITHOUT FIRE.


A patent has been recently granted to Mr. Albro, of Baryhamplain, N. J., for a culinary contrivance for cooking without fire. The required caloric is generated by the employment of lime and water. Between these two substances there is a strong chemical affinity, and when they are brought in contact, in the proper proportions, they unite with such rapidity and energy as to develop an intense heat. No decomposition takes place, and therefore no gas escapes: thus heat is produced without combustion.—The inventor turns this phenomenon into a highly useful purpose in the present improvement. During an experiment made in our office the other day with one of these contrivances, we cooked a slice of ham, stewed a dish of apples, baked some other apples, and boiled a quantity of water, all at once, at a consumption of perhaps a quarter of a cent's worth of lime. The inventor makes several different sizes; the largest does not exceed a lady's handbox. Among them is a dinner pail pattern so arranged that the mechanic, when noon time arrives, has only to pour a half pint of water in the pail in order to cook a warm dinner. The nice and edible are of course, arranged at home. [Farm Journal.]

Now is the time to make compost heaps.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.


RALEIGH, N. C., JANUARY, 1857.

 Severe domestic affliction is our apology for the lack of Editorial matter in this number.

MANUFACTURE OF RAILROAD IRON.

The Albany Statesman says; "The New-York Central Railroad Company manufactures its own railroad iron at a less cost than one half its market value. The average cost to railroad companies is now \$60 to 65 per ton, while the cost to the manufacturer is about \$30 per ton. The cost of the Central Railroad Company's iron works, all complete, including 1,500 acres of land, containing their ore, was \$145,600. This sum the company saved in one year by making for itself the iron necessary to supply the annual wear and tear of their road."

This is the policy, while Editor of the Star, which we earnestly recommend to the North-Carolina Central Railroad; and had it been adopted, great good would have resulted to the road and the State.

 We invite special attention to the important communication in this number of the Arator over the signature of "Carolinian"—an able and patriotic citizen of the State. When will our people awake to their true interest?

RECLAIMING OLD FIELDS.

To the Editor of the Arator:

Long-Creek, N. C., Dec. 20th, 1856.

Dear Sir: Enclosed is my subscription to the Arator.

I have recently purchased about one hundred acres of land adjoining my premises, which I design experimenting in the way of farming.—This land is of clay subsoil.—a little sandy in spots, and was once under cultivation, but now entirely grown up in old field pines. I intend to cut these down this winter—let them lay until spring twelve months—then lime freely and turn under with a heavy two-horse plow. I desire of you some information about applying the lime? How much it will take per acre? How to apply it, and

the quality of lime? After this I expect to manure with mud and lime—as there is a tidewater creek surrounding the place, with plenty of rich mud not more than a quarter of a mile to haul.—Any additional information will be gladly received.

Yours respectfully,

T. H. WILLIAMS.

Answer to the Enquiries of Mr. Williams.—

In the first place, we would cut up and heap all the small undergrowth, and then turn under the pine straw which has accumulated on the surface, with any kind of plow that would do the work effectually. Next, we would put on 10 bushels of lime to the acre, and then cut down the trees intended to lie on the ground. After finally clearing up for cultivation, we would plow again with a two horse turning plow followed by a subsoiler or coultter in the same furrow; and then the first year, sow the field in peas broadcast, which should be covered with a cultivator, or, very shallow, with a cutter. We would follow this immediately with another dose of 10 bushels of lime to the acre upon the peas. The lime may be of stone or shell, fresh slacked with salt water; and, in the absence of a machine, must be sown with the hand, as seed are sown broadcast, as evenly as possible, and harrowed in. In September, we would turn under the crop of pea vines; and in October sow wheat or Winter Oats on the land; put from 50 to 100 bushels of wood ashes to the acre after plowing in the grain: and harrow, after sowing the ashes, until they were intimately mixed with the surface; which would leave the soil minutely divided and smoothly *ironed* off.

Experience, we believe, has proved that lime is most profitably applied, repeatedly, in small quantities—say 12 to 25 bushels per acre, from year to year, until 50 to 100 bushels are applied to the acre; and that it should generally be applied so as to lie awhile on, or near the surface, before it is turned under.

Creek or River mud or muck should be deposited over the land in convenient heaps for distribution, and there permitted to remain a month or two; and if it be intended to mix lime with it, a week or two before spreading, the heaps should be shoveled over and the lime sprinkled over thin layers of the muck, until each heap is evenly surcharged with its proper proportion, and neatly done up in such a manner as to turn the water.—At the end of a week, it may be turned again to mix and then spread broadcast bountifully over the

land—and like stable manure, should be immediately turned under, to prevent the escape of ammonia which the lime has a tendency to disengage.

ED. ARATOR.

THE TRUE POLICY OF THE STATE.

Scotts Hill, New Hanover Co.,

December 30th, 1856.

T. J. Lemay Esq.

Dear Sir: Allow me through the columns of the "Arator" briefly to direct the attention of your readers to a subject of great importance to us as a people. The time has come, I think, when a serious and sustained effort ought to be made by the people of the South to inaugurate a new policy in regard to manufactures. As a people, we are too dependent on other sections. All of us know this, and most of us deplore it. The clothing and shoes which we wear, the furniture of our dwellings, and the implements with which we cultivate our farms, all or nearly all, come from the North. Now, I blame no man for buying from the North, for so long as our Southern Mechanics hang back, and by a want of enterprise, leave open the door for Northern competition, just so long will our people, following the rule of buying where they can buy cheapest, continue to patronize the manufactories of the North. It is vain to appeal to patriotism or sectional feeling, unless the appeal is enforced by calculations addressed to the pocket. There may be a few in every community patriotic enough to patronize a home establishment even at pecuniary loss; but the great mass will act differently.

But to come home to the more immediate subject of this communication, why is that the farmers of our State are obliged to use implements made in New York or Massachusetts? Why may not our plows, harrows, reapers, straw cutters, corn shellers, and the various other tools of husbandry, be made in Raleigh, or Goldsborough, or Greensborough, as well as in Boston or Albany? The materials of such articles are far more abundant in North Carolina, than in the localities where they are so largely manufactured; and I doubt not could be furnished cheaper. The facilities for distribution are excellent. Our railroads, built and building, penetrate the best agricultural portions of the State; and along the lines of these there will be a constantly increasing demand for farming implements of an improved kind. Capital is not wanting among us for all necessary and proper enterprizes, and such I esteem this to be.

If, therefore, we have the *materials*; the ready market, with every facility of reaching it; capital sufficiently abundant, with living in our interior towns reasonably cheap, what hinders us from making our own farming implements? Skill is not wanting; for if our mechanics were deficient, it might be obtained for its price. Indeed, nothing is wanting save a little of the spirit of enterprise—a little Yankee *go-aheadativeness*.

When, Mr. Editor, are we to wake up to an appreciation of the advantages of our State? When will capital begin to seek, among us, some other investment besides land, negroes and bank stock? We never can become a prosperous people until our pursuits shall be more diversified.

Yours truly,

CAROLINIAN.

[We thank "Carolinian" for the foregoing sound and patriotic communication, and hope his able pen will continue active in the noble cause which has set it in motion, until the important object so much to be desired shall be accomplished. We should be glad to see this article published in every paper in the State, with a spirited editorial calling up our capitalists from their slumbers to a sense of their duty and interest in connection with this subject.]—Ed. Arator.

TARBORO', N. C., Dec. 15, 1856.

MR. ARATOR.

Dear Sir: I have seen several notices of late, in the agricultural papers, of large hogs that have been killed this fall. Having seen the aggregate weight of 20 hogs killed on the plantation of Messrs. Norfleet & Dancy, of this (Edgecomb) county—early in November—none of which were 17, and several of them under 15 months old; I concluded to let you know of it. If you think it will do, why, print it. 20 hogs weighed 6425 lbs.—7 of the 20 over 400 lbs each.

"TAR RIVER."

RECEIPT FOR MAKING INK.—1. Take three ounces of best galls and a quarter of an ounce of cloves, bruise to a coarse powder, and boil over a slow fire, in a pint of water, for a few hours, stirring frequently; then set aside in a covered vessel till cold; then strain, and supply the place of the water lost by evaporation till it measures one pint. 2. Now dissolve one ounce and one drachm of the best copperas in half pint of water and strain; then dissolve five drachms of gum arabic in half pint of water, and add to the copperas solution, an half pint of good cider vinegar. Now mix 1 and 2. and add one ounce of liquid blue. Use soft water, Let your ink be exposed to the air, and you will have a black ink.

One of the commonest and most foolish things in the world, is to quarrel, no matter with whom, man, woman, or child ; or upon what pretence, provocation, or occasion whatever. There is no kind of necessity in its and no species or degree of benefit to be gained by it. No man ever fails to think less of himself after than he did before one : it degrades him in his own eyes, and in the eyes of others ; and, what is worse, blunts his sensibility to disgrace on the one hand, and increases the power of passionate irritability on the other.

Boiled Corn Pudding.—Mix well together : 3 cups Indian meal ; 2 cups of buttermilk ; 1 cup of water ; half a cup of butter ; half a cup of sugar ; 2 teaspoonsful cooking soda, and 2 beaten eggs. Put into a tin mould, covering the top with a cloth firmly tied on, and boil three to four hours. A convenient mould may be made by cutting off the top of an oyster can, and bending the edge over a wire. Serve with sweetened cream, flavored with nutmeg ; or with butter and sugar melted with a little water, and a few spoonsful of currant jelly.

The addition of fruit, either fresh or dried, is a great improvement—to many persons at least.—*Cor. Amer. Ag.*

Salts for Stables.—If a compound of gypsum and sulphate of magnesia be used on the floors of stables, it will absorb the moisture and ammonia, and keep the stable dry and free from offensive smell. The compound salt, after it has absorbed all the moisture possible, is removed to be used for manure, and fresh salts applied in the same way. This is an excellent plan for keeping stables dry and healthy.

To Take Ink Stains out of Mahogany.—Put a few drops of spirits of nitre in a teaspoonful of water, touch the spot with a feather dipped in the mixture, and on the ink disappearing, rub it over immediately with a rag wetted in cold water, or there will be a white mark which will not be easily effaced.

THE DEW—The following quotation from Dr. Wells on dew is highly instructive: "I had often smiled in the pride of half-knowledge at the meanly employed by gardeners to protect tender plants from cold, as it appeared to me impossible that a thin mat, or any such flimsy substance could prevent them from attaining the temperature of the atmosphere, by which alone I thought them liable to be injured. But when I had learn-

ed that bodies on the surface of the earth became, during a still and serene night, colder than the atmosphere, by radiating their heat to the heavens, I perceived immediately a just reason for the practice which I had before deemed useless. Being desirous, however, of acquiring some precise information on the subject, I fixed perpendicularly in the earth of a grass-plot four small sticks, and over their upper extremities, which were six inches above the grass, and formed the corners of a square, whose sides were two feet long, I drew tightly a very thin cambric handkerchief. In this disposition of things, therefore, nothing existed to prevent the free passage of air from the exposed grass to that which was sheltered except the four small sticks; and there was no substance to radiate downward to the latter grass, except the cambric handkerchief. The sheltered grass, however, was found nearly of the same temperature as the air, while the unsheltered was five degrees or more colder. One night the fully-exposed grass was eleven degrees colder than the air, but the sheltered was only three degrees colder. Here we see the power of a very slight awning to avert or lessen the injurious coldness of the ground.'

BEEF IN NEW YORK. A glance at the total receipts during the year just closing shows a total number of about 172,000. These, at an average of 650 pound to each animal, give full 111; 000,000 pound. The price of 9½ cents per pound makes the city beef bill over \$12,000,000.

NEW KIND OF BREAD. At a late meeting of gentlemen interested in agriculture, at Tiptree Hall, England, a quantity of bread was handed round, which was made of wheat flour and white beets, mixed in equal proportions. The bread is spoken of as having been considered by the distinguished gentlemen who partook of it, as a very palatable article of its kind.

LOVE AFTER MARRIAGE; and thirteen other choice *Nouvellettes of the Heart*—By Mrs. CAROLINE LEE HENTZ, author of, "Liuda," "Rena," "Planter's Northern Bride," "Marcus Warland," "Robert Graham," etc. etc. Complete in one large duodecimo volume, neatly bound in cloth, for one dollar and twenty-five cents; or in two volumes, paper cover, for one dollar.

Mrs. Hentz was regarded as one of our purest, most elegant and successful writers; and her forthcoming works will no doubt delight the lovers of such writings. Copies of either edition will be sent to any part of the United States, free of postage, on remitting the price of the edition wanted, to the publisher, in a letter. Published by T. B. PETERSON, No. 192 Chestnut St. Philadelphia,

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring.

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-

ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turf or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address W. E. WYCHE,
Brookville, Granville Co., N. C.

June 16, 1856.

4-4tf.

FARMER'S HALL, RALEIGH, N. C.

The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the



articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as JENKINS' OLD STAND, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner unsurpassed by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY, PUBLISHER, BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including Records for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.

The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$1; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to

MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good

and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, January 19, 1856.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Pears, Peaches, Plumbs, Apriots, Nectarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford county, N. C., or to Owen Lindley, Cane Creek, Chatham county, N. C.

JOSHUA LINDLEY.

OWEN LINDLEY.

Nov. 1, 1856.

2t.

HOME MANUFACTURES.

Will not some of our enterprising citizens get up a Wood Shop, in connection with the Foundry of Messrs. Burns & Co., for the manufacture of agricultural Implements? It will *pay well*. See the

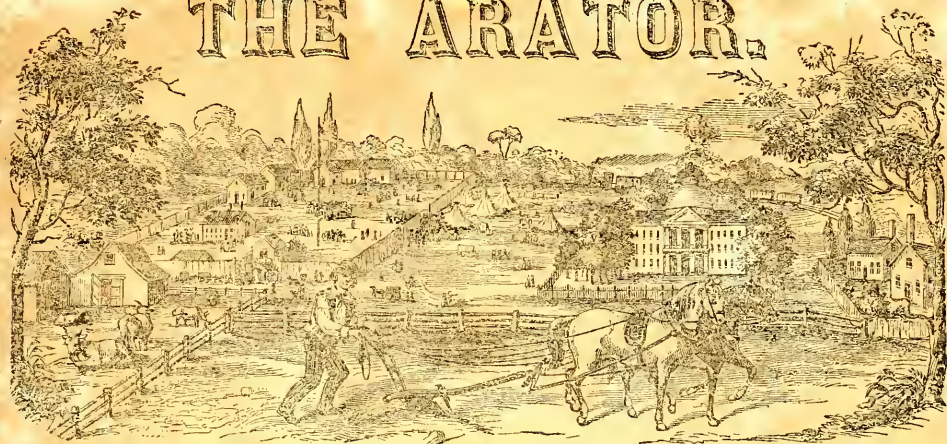
"Carolinian," page 677. Mr. Burns deserves a monument for what he has done for the City and State, by the establishment of his noble Iron Works.

PAYMENTS FOR THE ARATOR SINCE DEC. No. Alexander, C. H. adv. 3 dollars; Orme, W. P. adv. 3 dollars; Williams, T. H. 2. The following one dollar each: George W. Blackhall, B. F. Quin, Alfred Brower, Dr. J. H. Jones, M. S. Dance, 2 P. H. Knight, James D. Cox, Nathan Douglas, Francis Clark, Sr., Thomas Macen, John Finley, John F. Rhodes, Dr. Geo. W. Ruffin, Wm. Hazlewood, Thomas Lockart, Bev. John F. Speight, Solomon Quicks, Cyrus Fleming, R. W. Lassiter, Dr. J. A. Russell, Jesse Walker, Jos. J. Davis, John B. Yarbrough.

INDEX TO JANUARY NUMBER.

Davie County Agricultural Society, 657; Spouting Osage Orange Seed, 659; Stabling, 661; Cure for Itch, 662; How to secure good Fruit Crops, 663; A Mammoth Sheep, 663; Fly in Wheat, 663; Bacon vs. Pork, 664; Improvement of Soil by Subsoiling, 664; Grapes and Wine, 665; Cherokee Rose, 665; The uses of Plaster and Charcoal, 668; Address of Prof. Mitchell, 670; Cooking without Fire, 675; Railroad Iron, 676; Reclaiming Old Fields, 676; The True Policy of the South, 677; Large Hogs, 677; Recipes, etc. 677-8.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, FEBRUARY, 1857.

NO. XI

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, invariably in advance.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more, at the same rates.

REPLY TO LITTLE FARMER.

FOR THE ARATOR.

Hills of Tullahatchie Co., Miss., Jan. 15, 1857.

Mr. Editor: I wish to enter my protest against the anti-emigrant sentiments of "Little Farmer," of "Potato Diggins," given in the December No. 1856. Your motto I admire, but he has certainly gone beyond the meaning of the text. Suffer me, therefore, to follow him a short distance, and I will leave him by telling my mode of keeping potatoes, which has proven good for four years.

I would not have him love old North Carolina less, but his country more.—an our "Little Farmer" figure and cypher and give us the dimensions of paternal love, or tell us where is our native land? Is it in our mother's lap, or father's yard, or around the stars and stripes which wave triumphantly over the broad expanse of this great republic?

He tells us what Messrs. A, B, C & D have done at improvement, and without figuring and cyphering, throws himself upon declaration, and says it cost him but very little. Now, I would not be disposed to question him, if he had closed here. But with youthful love, and imagination warm, he lets fall the cyphering spine, and grasps the good old State, with hug so tight that she swoons. Come, my friend, loosen your hold a little. Nature, who is affectionate, kind and gentle, but yet powerful in the affairs of men, will sprinkle her with dew and cover her with flowers sweet. Come, I pray thee, just before you set the figures so plainly for the cost of a removal to Arkansas, and cypher up the cost of covering a large old field with dirt, leaves and all sorts of trash from the woods. Set in figures the amount of that "a little extra industry and attention." Tell us, also, how many acres Mr. A's pig pens have improved permanently. I am extremely fond of pork and turnips, and as I have just had a mess and am in quite a good humor, we will say, that, for a little farmer, you exhibit much knowledge of the vast number of farms south of Mason and Dixon's line. How long do you

think it will be before there will be in the South and West, persons as convenient to the emporiums of commerce as those of North Carolina?

You are aware that we have quite a number of navigable streams, and that many of our cities outnumber in population 100,000.

Please look over your estimate of the cost of removal to Arkansas. Perhaps you will be willing to lower the figures a little. I was raised north west of you a jump or two, and I have travelled to and from tide water to western waters many times; I assed your State when corn cost not a trifle, and it never has cost me in the region of your estimate.

But a cheaper system, than applying the whole amount necessary for an outfit to and in Arkansas, can be successfully adopted, so that your lands can be made to produce equal to any elsewhere. Will you figure and cypher a little and give us the time necessary to do this? For, really, unless something more practical than emigrating, or improving upon the amount necessary to emigrate, according to your estimate, can be shown, I fear that Carolinians will do neither.

Would it not be hard to persuade any little farmer that he is fully able, and that he ought to expend 4,800 dollars, in four years, upon 250 acres of wornout land? Now, if mules and implements are worth more in Arkansas than in Carolina, I would say, just put the mules to a good wagon, with a light load of the necessary implements, and set out—I would not say, all for Arkansas, for there is much new and desirable country in this great valley besides. By the way, this valley has many lofty hills, as well as gently undulating surface, and you will find that fifty cents for meat, and as much for meal, per week, will supply your negroes with as much as they have been used to, and that eight weeks will take you far enough, even though Arkansas be your destination; and this, when we shall have figured and cyphered a little, will amount to eight dollars per negro, the

trip; which will be all, except a half dime occasionally, at a bridge or ferry. White persons can live, be stout and active on the same amount. If they choose port wine, quails and pudding, I prefer that they make their own estimates.

You say, my Little Farmer, that by remaining and improving, you will have a clear gain of good markets, good roads, good water, good climate, good health, good government, good society, good increase—and, finally—why did you stop short of Heaven?

“Clear gain!” Do you speak ignorantly? Do you really believe that we have none of these “good” things? Fie! fie! wake up and inform yourself. Hundreds of our neighborhoods here furnish these things more abundantly, with rich land, or land already covered one or two inches deep with dirt, leaves and all sorts of trash from the woods, to boot.

Tell your people that Sir Walter Raleigh gave as glowing a description as you have, of your State, now nearly three hundred years ago, and yet he, from disease and other causes, made a failure there. Say to them what one of your distinguished citizens has said to the world, that even now many of your people are conveying their produce to market, in wagons, a distance of from fifty to three and four hundred miles. But enough. Just let me say, that after you shall have sold your load, after travelling this distance, pop your whip and put out here, where potatoes are already dug.

LITTLE PLANTER.

P. S. Put your potatoes where they cannot freeze; there is no danger of heat, if you will have a layer of shucks between each thin layer of potatoes, throughout, until you are done putting up.

For the Arator.

SUBSOILING.

Mr. Editor: Having proved the benefit of subsoil plowing, in the cultivation of corn, I will state the fact for the

benefit of my brother farmers. In breaking up my land for last year's crop, I turned deep, being careful to throw up but little of the sub-soil, following, in each furrow, breaking deep without turning the sub-soil. This experiment was tried with only a part of the crop: the after cultivation was the same with the whole. The result was, that during the long drought of summer, which cut short at least a third of my other corn, the subsoiled portion remained green and uninjured—plainly demonstrating the great benefit of subsoil plowing. The reason why it does good I leave to the more learned to explain. My business, as a plain, practical man, is with facts, and this statement is given simply for the reason above stated. Experiments, showing the best method of cultivation in our own State, published in your paper, is what makes it more valuable to us than papers published in a different latitude and in the midst of a different people, operating under different institutions. Whilst there are certain great leading principles in the science of agriculture—such as the necessity of collecting and applying manure, hill-side ditching, thorough draining, close cultivation, &c.—which apply every where; the various details in the modes of carrying them out must depend upon the nature of the soil and climate, the labor to be applied, the crops produced, and other local circumstances. Home papers alone can be relied upon for much important information needed on these branches of agriculture. Hoping that others may be induced to furnish for your paper the results of their experience, I remain

Yours &c. B. L.

Harnett Co., Feb., 4, 1857.

TO DESTROY THE BARK LOUSE.

For the Arator.

The Country Gentleman states that a certain remedy for the bark louse is, using the common sal. soda, which may be had at any druggists for three cents a pound. Dissolve it in water, allowing one pound of the sal. soda to each gal-

lon of water. When well dissolved, apply it with an old white-wash brush to the limbs and trunk of the tree. It destroys all insects which harbor under the loose bark, and effectually kills the bark louse. Use it in spring and autumn when the trees are not in leaf, and its effects are astonishing in giving a new vitality to the tree. I beg leave to add, for the benefit of those who cannot conveniently get the soda, that a strong ley made of hickory ashes will produce similar effects. GARDENER.

IMPROVING OLD FIELDS.

For the Arator.

I was pleased, Mr. Editor, with your advice to Mr. Williams, in the January No., on the improvement of pine old fields. It accords with my experience on the subject, except as to the lime, which I have never used, though it is no doubt a valuable adjunct. I have found the best way to improve and bring such lands again into cultivation is, as you direct, first to cut down and pile up all the smaller growth and brush, and then take a good strong plow and forthwith turn under all the pine straw; immediately after which take the axe and cut down fore and aft all the trees, letting them lie one or two years to rot on the land. Then let the ground be cleared of all the grosser remains of the trees, which should be piled and burned in convenient heaps. This will prepare the way for the plow again, which should be used to break deep and turn under the trash. Peas are then sowed broadcast, at the rate of three pecks to a bushel per acre, and put in shallow with a small plow. As soon as the vines are beginning to bear well, turn them under, and sow wheat on them. By a proper alternation of crops, and the use of the pea fallow always for wheat, the land will keep up, and, you may depend upon it, it will pay. By the addition, occasionally, of wood ashes and a dose from the compost heaps, the land may be brought to surpass its original fertility. That, too, will pay. I have tried it. How many

of your readers will go and do likewise? The cost will not be great for an experiment.

WAKE.

FINE STOCK.

Among the treasures which Mr. Troye, the artist, brought from his recent explorations in oriental countries, is a veritable Arab mare. This animal, which was purchased for a stock importing company in Kentucky, is now in this city. She is a long, well knit, shapely creature, of a greyish color, about the average size, with very large and muscular thighs, and a marvelous elasticity in every movement. Her value is estimated at 10,000 dollars. This is the second mare of the desert which has been brought to this country. The first, also, imported by the Kentucky company, came in by way of New Orleans. An Arab is extravagantly fond of such animals. He would almost as soon think of selling his own child as the fleet and patient beast which has been reared in his own tent, is his tireless companion in desert journeys, and his most productive source of income. The best stock in the world come from Arabia, and the importation of original Arab mares to this country cannot fail to improve the American breed of horses.—N. Y. Jour. of Com.

HOW TO LAY OUT SURFACES.

To lay out an acre circle: First fix a centre, and with a rope as a radius, seven rods, three links and three eighths long, one end attached to the centre, and kept uniformly stretched, the sweep of it at the other end will lay out the acre.

For one quarter of an acre, a rope 3 rods and 14 links will be the right length.

For one eighth of an acre, a rope two rods and thirteen links will be enough.

Triangles: If you wish a triangle to contain just an acre, make each side 19 rods, $5\frac{1}{2}$ links long.

A triangle whose sides are six rods long and twenty links long each, will contain one eighth of an acre.

To lay out an ellipse or oval: Set three stakes in a triangular position. Around these stretch a rope. Take away the stake of the apex of the triangle, which will be where the side of the oval is to come—move the stake along against the rope, keeping it tight, and it will trace out the oval.

A square, to contain an acre, or just one hundred and sixty rods, should have each of its sides just twelve rods, ten feet and seventeen-tenths long.

To draw an oval of a given size: The long and the short diameter being given—say twenty feet for the shorter, and one hundred for the longer—divide the short diameter into any number of equal parts, say ten, and from each point draw a line parallel to the long diameter; then divide the long diameter into the same number of equal parts (ten), and from each point draw a line parallel to the short diameter. Then draw a line from point to point where each corresponding line cuts the other, on the outside, and this connecting mark will describe the oval or the ellipse required.

For the Arator.

Do our lands need lime? This is an important question, and the farmers in North Carolina are deeply interested in finding the true answer. It is understood that Prof. Emmons has given it as his opinion that the soil about Raleigh is wanting in lime and would be greatly benefited by liberal application of it, and he is certainly good authority. Now, the land in the vicinity of Raleigh is a fair specimen of much "of the same sort," in Wake and the neighboring counties; all of which would be improved by lime. But another question of equal importance is, can we afford to use the lime, and where can we get it? The answer to this is, we can afford to use it, provided our railroad will bring it, as is its interest to do, at a very low or nominal cost for transportation. Oyster shell lime may be had in great abundance at Beaufort, our own seaport, which will soon be acces-

sible to the interior by railroad, at a very cheap rate—say not more than fifteen or twenty cents a bushel. Our farmers can then afford to use it, and may dispense with all foreign fertilizers.

The advantages of lime are, 1st, mechanically to improve the condition of the soil, by making clay lighter and more friable, and sandy land closer and more retentive of moisture and manure. Secondly, in its effects upon vegetation. In regard to this, as, in my judgment, justly remarks a writer in the Georgia "Southern Cultivator," it has "a two-fold tendency, one to do direct service to growing vegetation, the other indirect. Lime offers carbon on its own account, by its superior affinity for it; it speedily decays vegetable fibre and throws an additional supply to aid their wants by its changing their condition into humus. Vegetable substances thus suddenly changed, not only offer carbon, but produce moisture by loss of their elementary condition. It coagulates alumina and renders the soil friable and easy of culture. We consider lime as a special generator or a reservoir for carbon to nascent plants.

Plants have an innate power of robbing from air and soil food to supply their wants. The leaves of plants have galvanic force in drawing, from atmosphere, carbon, roots, &c., on glass, and why not the rootlets drain from lime its elementary condition in this particular? It unquestionably does. Lime being thus suddenly deprived of its purity goes steadily to regain its supply which is again converted into use by plants, and thus continues as long as an uninterrupted state of affairs exist.

When we analyze our grain crops we find lime an indispensable article in their composition—they do not mature without it. Man needs this substance for the development of his bones—in bones and grain it exists in a phosphate. We do not condemn special manures, but when we consider the great influence the vegetable kingdom possesses in the conversion of elementary substances into digestible food for their

wants, we almost feel disposed to be incredulous on the subject. Nature has strange ways of its own. The *Datura Stramonium* culls its deadly drug from the same soil that the rose would fill our olfactories with rarest of perfumes or furnish our tables with the daintiest morsel to allay our hunger. Each genus seems to have its own road to travel, and changes constituents to its own liking & adaptation, we do not mean by this that lime would be formed from silica, or potash from alumina, but we are disposed to the opinion that where lime or silica or potash is present the plant changes it to suit its adaption for its civil wants in that particular.

We have always considered fresh burnt (calcined) lime as best adapted to agricultural purposes. In this condition it is sparingly soluble in water and enters into combination with the soil more thoroughly, neutralizing acidity and furnishing a greater scope for the rootlets of plants to feed upon.

Plaster to grass crops is said to be more efficient, but we do not see the philosophy of this. It is, however, more permanent from its insolubility as a sulphate, and would render good service to succeeding crops.

Lime is soluble in carbonic acid gas, and should always have topical application no matter in what form it may be applied. This gas is generated by the decay of vegetable matter and renders it always susceptible to the wants of vegetation whenever moisture is present. When plowed into the soil too deep it may go beyond the reach of the roots and to be of no service to the growing crop. This illustration is plainly proved by the stalactites in caverns, and the petrifying of wood and human bodies in certain lime districts where exposed to these influences."

If the views given above be correct, our lands should be limed. Lime, indeed, must form the basis of all permanent improvement. Our agriculturists should look seriously into this matter: and, to encourage the use of lime, the managers of our railroads

ought immediately to resolve to transport it nearly freight free, and publish the fact for the information of the public.

L. S.

CHEAP MILL FOR SUGAR CANE.

Those of our readers who may desire to raise the Chinese Sugar Cane with the view of making molasses and sugar, may supply themselves with a cheap mill for crushing the cane, at Atlanta, Geo. We learn from the Southern Cultivator, that iron works cost only forty-five dollars; and that the wood work can be made cheaply by any negro carpenter.

SCARLET FEVER.

This disease is raging fatally in various parts of the country, especially in New York. The Evening Post gives the following as very beneficial, in relieving if not curing the patient. The writer pronounces it very efficacious for the terrible soreness and ulceration of the mouth and throat in aggravated cases. Take equal quantities of honey and sweet oil—both should be pure—say one table spoonful of each, or one teaspoonful; heat it on a sheet of glazed letter paper over a spirit or fluid lamp, and give the patient, at frequent intervals, a small quantity, as cold as it can be taken. It can do no harm, and has, in some cases, where the collection of mucus in the throat and mouth almost produced suffocation; saved the patient's life.

THE WINE TEST OF MR. AXT.

The Southern Cultivator, published in Augusta, Geo., says: "Mr. Chas. Axt, of Crawfordsville, Georgia, already favorably known in this State as a grape grower, recently exhibited some specimens of wine in this city, made by him from the Catawba grape, which were grown at his place during the years 1855 and 1856. There were two samples of the vintage of 1856, and one of 1855, known as dry Catawba. These wines bore the test triumphantly and were pronounced of good body and

fruity taste. The wine of 1855 was considered the best, having improved by time. Mr. Axt, (says the Constitutionalist,) has achieved for himself and for the South a great result in the successful introduction of this important branch of industry into this State. His wine we would place in the first rank of American wines of the same class, equal to the best dry Catawba from Longworth's or Werk's cellars.

AGRICULTURE AT THE SOUTH.

For the Arator.

Mr. Editor: It would be good for us, in the manner of conducting our business, as well as in our manners and morals, if we could, at all times, "see ourselves as others see us." It would no doubt "fra' mony a faulty free us and foolish notion." The following from the New England Farmer, if it does not literally "hold up the mirror to nature," presents, in the main, too true a picture of the lazy, improvident and unsuccessful method of conducting the pursuit of agriculture which prevails extensively in our own State. I ask its publication that the laggards among us may read and profit. Surely, if they can be aroused to a sense of their condition, they will put forth their energies in improvement, and wipe away the reproach which has settled upon them. Our advantages are certainly vastly superior to those of the New England Farmer, in soil, climate, and domestic help; and if we would use a moiety of his industry, economy, and system, we could not fail, always, to outstrip him in the accumulation of the "comforts of life," and "advantages of education for our children." But to the communication of our Vermonter, who thus gives his views of "Agriculture at the South," over the signature of "Operarius." He says:

"While residing recently in one of the Southern States, I could not help thinking of the superior independence of a farmer on New England soil, even with a small farm and small means, compared with many a planter, his

broad plantation and scores of negroes. I verily believe the proprietor of a cottage and ten acres of land in Vermont, with a willingness and a disposition to work, can have more of the "comforts of life" and advantages for the education of his children, than a majority of Georgian planters, who own land and slaves to the amount of thirty or forty thousand dollars. Why is this?

It is partly owing to the inefficiency of slave labor; partly to the fact that the white persons composing a planter's family, from their indolent habits, are more consumers; in some degree to the high prices which must be paid for all manufactured articles, but most of all, to the very imperfect system of farming which prevails almost universally.

Most of Georgia and Carolina farmers, so far as my observation extended, never make, save, nor apply any kind of manure. Land is cultivated, or rather cropped, as long as it is capable of producing any thing, without regard to rotation, and then left common, making what is termed "old fields."

The area of this wornout land is rapidly extending itself, planters seeking some new spot, again to practice the same exhausting process of tillage.

Farming tools, that belong as far back as the seventeenth century; plowing, that merely scratches the surface; overseers, who have no intelligent notions of agriculture; slaves, who care not how their work is performed; absence of home markets for fruit and other perishable products; the frequent and entire loss of crops upon land shallowly plowed in seasons of droughts—are a few of the disadvantages and features common to Southern farming.

I could mention the names of many planters, who, though called wealthy, would be unable to meet their current expenses, if they were not able, occasionally, to sell a negro, so as to replenish their empty purses. Such are generally the occupants of wornout soil.

Who would be willing to exchange his New England home for a life of indolence and ease in the sunny South?"

I "kinder kalkilate" this Vermonter has met with some reverses at the south which have soured him a little; but he has told some truths, which, though not very palatable, may, nevertheless, be wholesome. Let our Southern planters wake up and do better hereafter.

LOOKER-ON.

TURNIPS FOR HOGS.

Turnips by themselves will not fatten hogs. The material contained in turnips is that of which the muscle is formed, and is destitute of the oil necessary to produce fat. Turnips will therefore be good nutrition for making muscle or lean flesh; and the Rutabaga or Swedes turnip will keep hogs in growing condition; but when given to fattening hogs, they must have meal boiled with them, and the more meal the better.

CLIMATES OF THE U. STATES.

On the evening of the 29th ult., (says the Scientific American,) Professor Lorin Blodget, of Washington, delivered a lecture before the American Geographical Society, in this city, on the above subject. He remarked that at Fort Laramie, which is 4,500 feet above the level of the sea, the mean temperature is the same as at New York city, or at the level of the sea in the same latitudes; at Salt Lake, also, and on the plains of the upper Missouri, no essential reduction exists. The whole interior plateau declines in altitude northward from the north of New Mexico, so much that the measure of heat is fully as great at the upper portion of this plain on the Saskatchewan, as at Fort Massachusetts in New Mexico, its highest point at the South. From this important fact it results that the northern districts are more cultivatable than the southern, and more practicable for routes of transit to the Pacific. On the coast of the northwest we have the peculiar climate of the British Islands reproduced; and though the area is less than similar climates have in Europe, it establishes the seats of commercial activity at these high latitudes. There is a peculiar cli-

mate on the coast of California—a singularly cold summer, due to a cold sea current from the Northwest. Next come the soft vine climates of the south of Europe and of the Mediterranean. Next to this district is a reproduction of the Desert belt of the Old World. In each of these classes of climates the quantity of rain, as well as the measure of heat, follows the same general analogy with the climates of the Old World. On the north, and over the northern plains, it is equally distributed among the seasons and moderate in quantity; on the northwest coast, small in quantity, as in France and Spain; meager in the desert belt; and, lastly, falling in almost tropical profusion in the semi-tropical climates bordering the Gulf of Mexico. In this last case the correspondence is with China and the north of India; but we have a large district having the tropical affinities which really extend over most of the area of the Mississippi Valley.

EFFECT OF PUMPKIN SEED ON CATTLE.

A correspondent—J. B. Freeman—of the New England Farmer, describes the evil effects of pumpkin seed on cattle, in rendering milk cows dry. He says he had been led to believe that they were good for feeding milk cows, and commenced to feed them out to a cow at the rate of half a bushel per day. "At that time," he says, "she was giving about eight quarts of milk per day, but instead of this increasing the quantity, it diminished it. I increased the feed to a bushel per day; still there was a decrease in the quantity of milk until the pumpkins froze up, when she did not give but four quarts per day. The cow did not fatten, and the reason for the decrease in the quantity of milk, I could in no way account for. I then took out all the seeds, when, lo, the change!—instead of five quarts of milk per day, I got nearly nine in a short time.

WOOD ASHES A FERTILIZER.

In nearly all soils ashes are beneficial to cultivated plants, but more so on gravelly land than clay; the latter being formed of granite rocks, naturally contains potash; turnips, beets, carrots, potatoes, &c. contain a very large amount of alkalis, and to such ashes are found to be very beneficial. But the immediate benefit of ashes is most perceptible upon leguminous plants, such as peas, beans, and clover, &c. On grass land it destroys moss, sorrel and all our sour plants. On poor, thin soil, it should be mixed with peat, muck, barn-yard and other organic or vegetable manures. Lime is excellent for wheat or corn. These two crops grow well wherever clover will grow, in calcareous soils. Barley requires a rich loam, finely pulverized. It will not grow well on a sandy or a soft soil. It will always do well on land suitable for turnips. A strong clay, well pulverized and dry, will yield a good crop. Clay soils always contain more or less lime.

Wood ashes are a most excellent manure, and can be used to advantage on almost all soils or crops. Orchards fatten on them. Unleached, they act rapidly and powerfully; leached, they act more slowly, but continue to act for many years after being applied. The mechanical effect on soils to render sandy lands more compact and retentive of water, while they separate and render friable heavy clay. Some farmers apply ashes as a top dressing. This will do very well on pastures and meadows, but they should be plowed under previous to planting or sowing, so that the roots of the plants may thereby be fed. Salt, lime, and plaster may be mixed with ashes to advantage for almost any crop, and upon all soils. Our people should be careful to save all their ashes and apply them to their lands, and even burn them with the view of furnishing themselves with a sufficient quantity to make liberal applications of them to their lands, with such other manures as they can raise, annually and systematically. This is done in Edgecomb county with astonishing success. Let all try it.

Try breaking deep for this year's crop.

THE BOSTON Medical Journal mentions the following simple and economical apparatus for overcoming bad odors, and purifying any apartment where the air is loaded with noxious materials. Take one of any of the various kinds of glass lamps—for burn-camphene, for example—and fill it with chloric ether, and light the wick. In a few minutes the object will be accomplished. In dissecting rooms, in the damp, deep vaults where drains allow the escape of offensive gasses, in outbuildings, and in short in any spot where it is desirable to purify the atmosphere, burn one of these lamps. One tube charged with a wick is sufficient.

A LARGE FLOCK OF SHEEP.—A farmer in Illinois named McConnell has a flock of sheep which numbers twenty one thousand of the choicest merinos.

ON THE SENSITIVE FACULTY OF A HORSE'S FOOT.

The sensitive faculty of the foot is to be found in its nervous and membranous tissues; for it is well known that the hoof, sole, bare and horny frog, are insensible,—the medium through which the sense of touch is developed or aroused.

By this wisely planned arrangement, a horse can with considerable degree of accuracy, ascertain the nature of the ground over which he is travelling, and thus regulate the action and force of his limbs, so as to favor his feet, and lessen the concussion, which he were destitute of this sense of feeling, must occur throughout the whole animal fabric.

As a familiar illustration of this peculiar sense of touch, suppose a person places in contact with his teeth, a piece of ice, or applies warm water to the tongue, he immediately experiences a sensation of heat or chillness, as the case may be. This occurs, simply by contact or touch; the teeth like the hoof and its horny appendages, being devoid of sensibility; yet both have nervous filaments on their interior surfaces. Within the tooth we find the dental nerve, and within the hoof is also found a similar arrangement, only on a more extensive and magnificent plan. The teeth and hoofs, therefore, may be said to be analogous in the function, so far as the transmission of sensibility is concerned, and at the same time they offer a wall of defence and protection to nerves, which are too delicate to come in contact with crude matter. Therefore, a horse's hoof is to the foot just what the tooth is to the dental nerve.

Some horses, however, appear, while travelling over the road, to be governed by the sense of hearing as well as that of sensation. Mr. Percivall has remarked, that "blind horses are observed to lift their fore legs in a manner that would indicate they are sounding the ground, after the fashion of a blind-

man with a stick; therefore, they may be said to see with their feet.—*Veterinary Journal*.

HEALTH OF AMERICANS.

Dr. Bow's mortality statistics, compiled from the last census, show that the people of the United States are the healthiest on the globe. The deaths are three hundred and twenty thousand per year, or one and a half per cent, of the population. In England the ratio is near two per cent., and in France nearly three per cent. Virginia and North Carolina are the healthiest of the States, and have six hundred and thirty-eight inhabitants over one hundred years of age.

SCIENTIFIC EXPERIMENT ON DOGS.

The canines, says the Philadelphia *Ledger*, captured by the dog catchers, are undergoing some interesting experiments, before being handed over to the manufacturer of oil and buttons. Two young physicians, Drs. Walton and Schooles are endeavoring to obtain a more thorough knowledge of digestion by experimenting with the dogs condemned to death. Those selected as martyrs to the science are well fed upon meats, bread, &c., and then allowed to exist from a half to two hours. After killing them the stomach is removed, and the work of digestion noted as well as the time employed in the interesting operation. Experiments were also made to ascertain the effects of strychnine, and chloroform as an antidote. One dog, just as he was, to all appearances, in the last agonies of death from the effects of the poison had chloroform administered to him, and in a few minutes he entirely recovered, and ran about as if nothing had been given him. He was afterwards killed by a second dose of poison. The experiments seemed to give great satisfaction to those engaged in them as well as Professor S. Jackson, who was present. The experiments are to be continued daily.—*Veterinary Journal*.

STRINGHALT.

Mr. Feron informs us, that this singular spasmodic affection is esteemed graceful in some continental countries; at least when it exists in both hinder legs as it frequently does, being however usually confined to one side: very seldom indeed is it found in the fore, of which we have seen but one or two instances at the most. It is evidently a spasmodic contraction of some one or more of the flexors of the leg, which usually ceases after the animal is in motion; it is the consequence of local irritation or of pressure on some nervous fibrille, which the excitement of exercise renders less acute; and generally restores the action of the legs to its natural condition. It is not hereditary or congenital, and seldom appears until the approach to the adult age. It is

injurious inasmuch as it unfits the horse for certain purposes, as racing delaying the start so long, as to give away every advantage. It is considered incurable; and therefore any and all treatment is useless, save for experiment.—*Exchange.*

CHARLES LAMB'S OPINION OF WATER CURE.—"It is neither new nor wonderful, for it is as old as the deluge, when in my opinion it killed more than it cured." Yes; but it saved all that were worth saving: that is *our* opinion.

COWS FOR WORK.

One man in California plowed seventy-five acres with a cow-team, and at the same time milked them every day. Were I a girl, I would not marry a man that would work a cow team. I should expect such a man to harness his wife to a wheelbarrow, and make her wheel stones and nurse children at the same time. What man of sense would use the unhealthy milk of a cow that was exhausted by daily toil? Women, are often worked almost to death, while bearing and nursing children; and if the children are stillborn, or die from the effects of unhealthy milk, drawn from the breasts of the exhausted mothers, the priests tell them providence killed the children for some wise purpose; incomprehensible to man, and so they are left in ignorance, and the work of destruction goes on. But few children are born free from physical and mental infirmities, on account of the condition of their mothers; and of the few who are born healthy, a large portion are soon diseased by natural dress and food. I have seen young children cross, fretful uneasy, and always miserable, and only because their mothers were overworked, or destitute of the comforts of life.

The world has much to learn and to practice, before cow-teams and women-teams cease to curse their offspring with disease. Many a child is cursed through life with a fretful disposition inherited from its mother; when, had the mother been in different circumstances, the child would have been a pattern of quietness. Drive on, ye ignorant editors, with your cow-teams and women-teams and see if the breeds do not deteriorate.—*Exchange.*

REPRODUCTIVE POWER OF FILTH.

A single atom of Spanish moss attaches itself to a southern tree, every moment and hour, day and night, summer and winter, it steadily extends itself until the whole tree is hung in the drapery of death.

The toad-stool mushroom, so deadly in its nature, is the work of a night, and augments with wonderful rapidity.

So it is with a low grade of animal and vegetable growth, which feeds on filth, and reproduces itself with the utmost celerity, thus spreading its area.

and concentrating its corruptive and destructive agencies, sweeping away human life like chaff.

These pernicious growths, scarcely themselves perceptible to the naked eye, have something immeasurably more minute, which answer to seeds, which flying in every direction, and, attaching themselves to all moist surfaces, begin instantly to grow. Thus it is that spots of neglected filth need but a little moisture and warmth to breed their deadly contagions, and scatter their leprous diseases far and wide.

Let every family, then, remember that each particular of damp dirt about their dwellings is a plague spot, and let every servant and child be visited with the severest reproof, who knowingly permits its continuance for a single moment.

MILKING.

The *Massachusetts Ploughman* says: The milker should sit close to the cow, and should endeavor by all means, to be on good terms with her; for if he scolds and kicks, she will be quite like to return the compliment. Sit close, and let the left arm be in contact with the leg of the cow: then she cannot set her foot into the pail if she is disposed to do it. She cannot kick while her leg is in contact with your left arm, for a blow requires space between the agent and the object. The best milker is he who is quickest for there will be a flow in less than a minute from the commencement of the process. Take advantage of this, and not let the milk flow back again. *Milk out all that the cow will give*, for the last milk, or the strippings, is worth more than four times as much for butter as the milk that first comes.

GLASS MILK PANS.—A farmer in Akron, Ohio, has been experimenting with milk in glass pans made by Gray, Hemingray, & Co., of Cincinnati, and furnishes the result to the *Ohio Farmer*: "I took the milk of the same cow, milked at the same time and divided it equally, putting half in a glass pan, and half in a tin pan, and placed them side by side. In the first twenty-four hours, were two thunder showers; and, at the end of that time, the milk in the tin pan was sour; that in the glass pan was sweet and good. At the end of twelve hours more, that in the tin was thick *clabber* or *lobbered*, as the Yankees call it, and that in the glass *began* to turn. From this, I believe, glass pans will preserve milk one third longer than tin pans. Will our dairymen try it?"

ITEMS FOR ALL.

The manure of milch cows is said to be deficient in phosphates.

Charcoal is an excellent agent for the preservation of root crops.

The smallest potatoes sometimes produce the large-

est crops; hence, we should not despise "*small potatoes*."

THE MOST HONORABLE PURSUIT.—The agricultural press contend that *agriculture* is the most honorable pursuit. Our theologians contend that the ministry is the most honorable: and the lawyer, that his mode of acquiring a fortune is second to no other. Now, we contend that the practice of veterinary medicine is the most *honorable pursuit*. And [let us whisper in your ear, dear reader,] it is the most useful and *profitable*, as well as *honorable*. What pursuit can be more honorable than that which contemplates and provides for the restoration of health in a sick and suffering animal—one that has no means of enlisting our sympathies? What science, excepting that calculated to benefit the health of the *lords of creation*, can compare with it? Some people are disposed to place a low estimate on the value of veterinary science, merely because a few uneducated men have succeeded in palming themselves on the husbandmen as legitimate practitioners; but we can prove, with all due respect to the science of agriculture and other sciences, *veterinary science* is the most *honorable pursuit*.

The Editors of the "*Vally Farmer*," in allusion to the death of "Black Hawk" and "Black Warrior," thus lament them:—

"Their course is run,
Their errand done—
Peace to their ashes."

A SINGULAR RELIGIOUS EXPERIENCE.—At a watch-meeting held in this city on New Year's eve, an old standard of the fold in talking against time, to bring in the new Year, related his experience for the amusement and edification of the brethren, and entering very minutely into the circumstances of his conversion, among other things stated that he felt very bad and did not know what ailed him; that he went to a doctor and was bled, for which old Lancet charged him a quarter, *although he held the dish himself*, and it was all waste, for he was not sick, but only under conviction.—*Bangor Journal*.

FUMIGATING POWDER FOR FOUL STABLES AND COW-SHEDS.—Take of powdered saltpetre one ounce, chamomile flowers and anniseed, one ounce each: mix. Put some hot cinders on a shovel, sprinkle, gradually, a portion of the above on the burning embers: it deodorizes the barn, or shed, and purifies the atmosphere.

GROUND OATS.—Several horse owners who have tried the experiment of feeding ground oats, state that their horses look, and work much better, than when fed on double the quantity of Indian meal.

PRICE OF FLOUR.—What is the reason that we of Massachusetts have to pay such an exorbitant price for flour? It is now selling in the New York market

at the following low figures:—Common State, \$5,87 to \$6,12½; extra, \$6,31 to \$6,75; superior Western, \$7,39; Genessee, \$7,37. In this vicinity \$9,50 to \$10,00
Vet. Jour.

AN IMPORTANT MOVEMENT.

Under this caption we find the following in the December No. of the Pennsylvania Farm Journal, the editor of which says, that a "powerful and influential company has been formed in Boston for the manufacture of manure, and it is proposed to form a similar one in the city of Philadelphia, with a capital of five hundred thousand dollars each. A chemist, of high reputation will preside over its manufacture, thus securing to a consumer the unvarying quality of the manure made. Its constituent parts have been submitted to several of the most distinguished chemists in our country, and in every instance they have given it their warmest approbation. The formation of such a company would be beneficial in more respects than one. Many thousands of tons of blood and offal can be collected annually in Philadelphia and vicinity, which now only serves to breed pestilence and disease, and which if properly prepared, would add very materially to the fertilizers of which the farmer stands so greatly in need. As a sanitary measure alone, it is deserving of the warmest support, while its value as a manure can scarcely be estimated. The immense amount of fertilizing matter annually wasted, would be brought into profitable use, and all parties benefitted."

This is all the information we have upon the subject, but we will endeavor to keep our readers advised if any thing grows out of the project mentioned.

PLOWING BY STEAM.

The application of steam to plowing is destined to prove successful, and will ere long produce as great a revolution in agriculture as it has already in locomotion. This is our belief, albeit the attempts heretofore made to accomplish the object have proved unsuccessful. Among recent allusions to the subject, we observe the following hopeful item in a letter to a Cincinnati paper, written from the Indiana State Fair:

"The steam plow, of Baltimore, (Hussey's,) which has created so much excitement at the Eastern exhibition, is here, and is attracting much attention. It is a land locomotive, with plows attached, and in a clear field tears up the ground at a terrific rate.—As almost any number of plows can be drawn by it, there is no doubt that it will come into general use upon our Western prairies, where lands are "broken up" by contract. It will not be successful, we think, in any other kind of plowing, being entirely too costly and unwieldy for ordinary farming purposes."

EXHAUSTING THE SOIL.

Is it not a singular fact, that in some of the old States we have had immense tracts of land, thrown out of cultivation, as having become exhausted of the soil, whilst in the old countries of Europe, which have been in cultivation for centuries, the reverse is the case! The soil of Europe, says a traveller, is now better than ever—and the reason he assigns, is the plentiful supply of manures, and manures made upon the best possible system, by which the soil is receiving more back than is taken away in products.

"Of all farm products. [says Mr. Chas. Remelin in the *Ohio Farmer*] the atmosphere and rains furnish the larger quantities of his component parts, and whenever a proper system of manuring exists, the ground must become constantly enriched.

"In Europe, manure is the ever present idea of the farmer, and by gathering all offals, and making manure in any conceivable way, he does not only by green manuring, such as plowing clover under, but by stable, factory, street, and dwelling manure, take good care to return to mother earth the rental she requires, and to do it without grudging and with compound interest. Soil is only there exhausted where crops are raised which are entirely removed, and of which nothing is returned to the soil—for instance, tobacco. This is very little the case in Europe. The fine wheat crops, which smile upon the traveler, as he is rushed past them by railroad speed, would be an impossibility, if the idea of exhaustion were true. The meadows, two which are mown thrice every year, and each time give a good crop, have been mown for ages, contradict this exhaustion theory. No! the European farmer, and his land, are always on good terms with each other. The man yields good husbandry and the land yields good crops."

WINTER PLOWING.

As there are many parts of the country in which our Journal circulates where winter plowing can almost always be advantageously executed, and others where, under favorable circumstances of the season it can be done at times, we advise all who have stiff clayey grounds that they intend for spring culture, to seize upon all occasions during winter, when the soil is not wet, to plough up such lands to plough it as deep as the soil will admit, to lap the furrows.—When spring arrives, and the ground is sufficiently dry to be worked without danger of being poached by the horses' feet, to roll it with a heavy roller, and finish the pulverization, by harrowing lengthwise the furrows. The earlier the ploughing is done this month the greater will be the meliorating influence derived from the frost.—*American Farmer*.

HEREFORD CATTLE.

The Herefords are a distinct breed of neat cattle, and have long been bred to a considerable extent in England where they are held in high estimation, especially for grazing. Their introduction and dissemination in this country has been comparatively slow, and hence they are yet little known in many sections. Of the late years, however, they have gained more rapidly in public favor, and now rank as a most beautiful and profitable breed. Marshall gives the following description of the Hereford:

"The countenance pleasant, cheerful, open; the forehead broad; eyes full and lively; horns bright, taper, spreading; head small; chops lean; neck long and tapering; chest deep; bosom broad and projecting forward, shoulder-bone thin, flat, no way protuberant in bone, but full and mellow in flesh; chest full; loins broad; hips standing wide and level with the ehine; quarters long and wide at the neck; rump even with the level of the back, not drooping nor standing high and sharp above the quarters; tail slender and neatly haired; barrel round and roomy; the carcass throughout deep and well spread: ribs broad, standing flat and close on the out surface, forming a smooth even barrel, the hindmost large and full of strength; round-bone, small, snug and not prominent; thighs clean, and regularly tapering; legs upright and short; bone below the knee and hock small; feet of middle size; flank large; flesh every where mellow, soft and yielding pleasantly to the touch; color a middle red, with bald face, characteristic of the true Herefordshire breed."

CLOVER.

From some suggestion in the *Ohio Cultivator*, on the cultivation of clover, we make the following extract, containing some valuable practical information:

"Clover wants potash, soda, magnesia, &c., as there is in every half ton of clover, twenty-three pounds of carbonic acid, sixteen pounds of potash, forty pounds of soda, eight pounds of magnesia.—These are taken from the soil, and on burning the clover, will be found in the ashes. Half a ton of clover—or eleven hundred pounds in exact weight—will make one hundred pounds of ashes; and in these ashes will be found the ingredients, and in the proportion we have mentioned, as well as phosphoric acid, sulphuric acid, chlorine, and sand in smaller quantities."

"Continued cropping of clover, taking these ingredients from the soil, will soon exhaust it, and unless they are supplied, the soil must cease to produce clover. Ashes contain potash; plaster contains sulphuric acid, salt contains soda and chlorine; and

on the doctrine of special manures, these will be good for the clover, and experience confirms the theory."

"These are a part of the mineral ingredients.—The gases are drawn principally from the atmosphere.—To do this, clover is peculiarly adapted, by its extensive system of leaves and flowers; and by its deep-running roots, it almost makes amends for the want of deep plowing. It brings, from the subsoil, mineral matters that few other plants reach, and furnishes them to other plants, when the clover is ploughed under, or fed to cattle, and the manure, containing the ingredients, spread on the land. The clover roots bring up the mineral ingredients from a great depth and when ploughed under, they are left, in a soluble form, near the surface. The gases drawn from the atmosphere, are also left in the soil, for the use of those plants that have not the faculty of gathering them for themselves."

"Corn requires a large proportion of potash and sulphuric acid, and would be benefitted by a similar dressing, or by taking it second-handed by following clover ploughed under. But vegetable manure is also necessary to form fibre. Powdered granite is found to be excellent manure, but it cannot form fibre. To obtain a full value of either, both should be used—the vegetable and mineral."

From the Farmers' Manual.

THE MANAGEMENT OF MANURES.

BY F. FALKNER, ESQ.

"We have already said, that plants in a dry state, such as straw, hay, &c., consist of carbon, hydrogen and oxygen, a very small portion of nitrogen, and of about six parts in 100 of alkaline and earthy salts: and that the former elements are placed, by the operation of the vital principle, under a different arrangement with regard to each other, from that which their chemical affinities give them—a tendency to assume.

The combustion on burning of vegetable substances is nothing more than a rapid and violent action of those affinities or attractions, in which oxygen plays the principal part. When they are heated to a certain degree, both the oxygen of the air and that already contained in the substance are brought into action, and the result will be easily understood from what has been previously stated of the nature of the elements concerned. The oxygen unites with the carbon to form carbonic acid gas, and with the hydrogen to form water, while a small portion of the hydrogen unites with nitrogen to form ammonia, or (though subject to some doubt) passes off uncombined. Carbonic acid gas is the most abundant of these products, water the next in quantity, and ammonia by far the least. These all escape as gases, and the ashes that remain consist of some or all of the

oxides or bases before described; united with some or other of the mineral acids—as alkaline and earthy salts, which differ very much both in kind and quantity, according to the plants from which they are derived. As these salts or mineral substances constitute an essential part of all plants, they are themselves capable of acting powerfully as manure. The most valuable and generally the most plentiful of them, are the salts of potash and the phosphates of lime and magnesia; not that the other salts contained in ashes are less essential; as for instance, muriate of soda (*common salt*) and sulphate of lime, (*gypsum*;) but because the latter are more liberally supplied by the hand of nature.

If, instead of being burnt, plants are accumulated in heaps exposed to the weather—as in a dung-yard—a similar action to burning, though of slower operation, takes place; which indeed, may be called a tardy combustion, in which the elements of the water present take an active part. The greater portion of the carbon, hydrogen and oxygen, with nitrogen are thus dissipated; the sulphates and phosphates are decomposed, producing stinking gases; and if, in the mean time, water be allowed to soak through the mass and drain away, it carries with it the soluble salts, ultimately leaving a black mass consisting chiefly of carbon, with a small quantity of hydrogen and oxygen, and some insoluble earthy salts. If therefore, decay be allowed to proceed to its greatest extent, it produces a much worse effect than absolute fire, inasmuch as all the soluble salts are lost. Vegetable matter reduced to this state is *humus*, or that black vegetable matter contained in all rich soils, and those of old pastury lands. The only difference is in the mode of their production, the one having been produced by the decay of plants on the surface and the other from the decay of the roots and leaves of plants, both above and beneath the soil. They operate in the same way in the nourishment they yield to plants, namely, by the salts they yet retain, by attracting moisture and ammonia from the atmosphere, and by slowly yielding carbonic acid gas to the roots of the growing crop.

If the quantity of water which mixes with the heap be limited, it is often evaporated by the heat produced by the fermentation; the chemical action in a great measure ceases; and the heap when opened, exhibits that appearance which is commonly called "*fire-fanged*." When in that state it will be found to have lost more than half of its value; but if due care be taken to regularly mix the layers of dung without too much intermixture of horse-litter, there will be no danger of the dung made by the cattle in the yards being over-heated by fermentation even in the warmest weather.—

Should that danger however, be apprehended, an addition of road scrapings, or earth of any kind, will prevent it; and in winter the cleanings of the cow-house, as being of a colder nature, will answer the purpose.

When plants and their seeds are consumed by animals, nearly half of their weight in a dry state, is given out from their lungs, or by perspiration from the skin, in a gaseous form, chiefly as carbonic acid gas and water, with some ammonia; the remainder of their substance, together with the effete or dead matter of the animal organs, are rejected, as dung or urine, except that portion retained as nourishment by growing and fattening animals. The *solid excrement* contains the woody fibre, the insoluble animal matter and salts; and the *urine*, the more soluble salts and substance rich in nitrogen. If no care be taken of the urine and it be allowed to run about the yard, it soon putrefies—its nitrogen flies off in the shape of ammonia; its salts are carried away by every shower of rain; and, although a portion of it may be saved by its mixture with the dung of the cattle, yet the greater part of its valuable contents are evaporated by the action of the atmosphere. If it be allowed to drain into a tank or other receptacle, it there also rapidly undergoes putrefaction; and if this be not checked a considerable part of the ammonia produced will escape with the sulphur and phosphorus, resulting from the decomposition of the salts containing these substances; occasioning the intolerable stench observed in such cases.—Now the ammonia, and the alkaline and earthy salts, are by much the most valuable part of farm-yard or stable dung, and the former is always more abundant, when cattle are fed with corn, oil cake, and other rich food. Without ammonia no seed could be produced; and without alkaline and earthy salts, neither seeds nor plants could exist.

It is the deficiency of some of these substances, when moisture is not wanting, which is the cause of land producing poor crops; and it is the almost total absence of some or all of them, which is the cause of complete sterility. Instances may almost everywhere be found of land, which though abounding in humus—such as healthy and peaty soils—are, notwithstanding, incapable of bearing grain. If the valuable substances above mentioned be wasted in the manner described—which is too often the case, to an enormous extent—the crops will be very deficient; and if to this waste be added, the carrying away of large portions of the produce—as when hay and straw are sold and no

manure returned—the land will soon cease to bear crops. To increase the quantity of manure raised on the land, should therefore be the constant aim of every farmer; hay should never be sold unless two tons of stable litter are returned for every load sent off the farm; and, unless the farm contains a larger portion of rough pasture, the horse teams should be kept in the stables, and soiled during the summer and autumn on green food; every portion of apparently refuse vegetable and animal matter should be carefully collected and added to the dung-heap; and in this manner it is inconceivable what additional quantities of excellent muck may be produced. The manure thus made, and not fermented, is generally applied either in its fresh state, or only partially turned, to clay land fallows which are to be sown with wheat; as being of a colder nature than winter-made dung, it will not occasion the crop to be pushed so hastily forward as to occasion straw instead of corn.

If attempts be made to supply the place of farm-yard dung, by *any one salt*, or, in other words, by two or three only of the elements of plants—nitrate of soda, or nitrate of potash, or sulphate of lime, (*gypsum*,) for instance—it will succeed only when all the others happen to be present on the soil by the effect of previous manuring; and will in evitably fail where those other needful substances are either absent or very deficient. Now, it is extremely different to ascertain in what salt the soil is really deficient; care must be taken therefore, in the application of artificial manures, that they contain all the elements included in the muck for which they are substituted. They are usually found, more or less in the dung heap; how needful, therefore it is that the farmer should take care of that manure produced upon his own land which certainly he knows he can safely rely.

It has been stated before, that the most efficient part of farm-yard dung is that small portion, invisible in the mass, which consists of earthy and alkaline salts and ammonia. The other ingredients which constitute the great bulk of manures, consisting of carbon and the elements of water, are abundantly supplied by the atmosphere to the growing plants, and therefore, a loss of these by needless fermentation or neglect, is of little importance, were it not that their loss is unavoidably accompanied with the waste of the more essential substances in the manure described. It should be the object of the farmer, not only to prevent the waste of such precious substances by every means that knowledge and ingenuity can devise, but also to

make every addition to them that nature of local circumstances have placed within his reach,

These very desirable purposes he will be better able to carry into effect when he fully understands the nature of the manure he has under his management, and by that means he can exercise a sound discretion in adding to its quantity and effect.

Let it not be alleged against any inquiry by the farmer into the constituent nature and chemical properties of his manure, that he has no ideas attached to the several terms used to designate the substances of which it is said to consist. He is obliged to learn the names and uses of the several implements he employs in the cultivation; and upon what principle, we may ask him, should he refuse to make himself acquainted with the names and general properties of the produce he raises? But little effort is required to obtain a precise knowledge of the several elements or substances, at least by the employment of which, he is enabled to raise and increase his crops, and is it not pleasant to learn, as well as most useful to understand, the reason of their value to him? Nor is this limited degree of chemical knowledge of difficult attainment. Every farmer has seen wood ashes, and also seen water poured upon them, for the purpose of extracting a something; that substance is chiefly potash which may be seen by evaporating the clean water, which leaves the alkali behind, and the dregs which remain behind consist, for the most part, of earthy phosphates—a similar substance to the earth of bones. Soda is now so commonly used as to be known at sight to most persons; lime and magnesia are still more familiar; ammonia is the common pungent salt of smelling-bottles; sulphuric, muriatic and nitric acids are extensive articles of commerce, and, with phosphoric acid, may be found at any chemist's shop, and these acids as well as their bases—potash, soda, lime and magnesia—may be had for a trifle, either separately, or combined as salts.—When, therefore, the appearance, or more obvious qualities of these several substances have become familiar, their efficacy as manure may be proved by mixing them thoroughly with two or three hundred times their weight of mould, and applying the compost to garden plants. The farmer might in this way soon become acquainted with the name character and properties of the invaluable substances contained invisibly in the muck of his yards; and would be the better able, and more desirous, to prevent their stealing away from him.

THE ORIGIN OF WHEAT.

The origin of the wheat which we now cultivate is involved in considerable obscurity. Nowhere is it found to exist native. In a paper in the *Edinburgh Review*, the author of it takes the ground that all our common cereals have been developed, by cultivation, from grains having, in their natural state, scarcely any resemblance to those now cultivated, and he asserts that the particular plant from which wheat has originated, is a grass growing wild on the shores of the Mediterranean, and known to botanists by the name of *aeolops*. If this is true, it will afford some clue to solve the question, "does wheat ever become cheat."

PHOSPHORESCENCE OF INSECTS.

The English chemist, Thornton T. Herepath, has been taking advantage of a recent trip to South America to collect and examine fireflies, in order to get at the secret of their luminosity. The commonly received opinion in regard to the source of the light emitted by insects, is that it is due to the slow combustion of phosphorus, resembling that produced by gently rubbing a moth with the fingers. Mr. Herepath denies this however, as he was unable, on the application of the most delicate tests, to detect the smallest trace of phosphorus in the bodies of these curious little creatures. His opinion is that the light is caused by the burning of a peculiar compound of carbon and hydrogen, formed in a special gland.

ARTIFICIAL MILK.

The Paris correspondent, J. Nickles, of *Sillimen's Journal*, describes as follows a new liquid under the above name, which has lately been introduced in Paris.

For some time a liquid has been prepared which is said to have so far the qualities of milk that it is called artificial milk or "laitviande." It is prepared as follows. Into a Papin's digester three kilograms of fresh pounded bones are put and one kilogram of meat with five or six times as much of water. The top is hermetically closed: double sides surround it, and in the cavity between, a current of steam circulates which raises the temperature of the digester up to 140° F. At the end of forty minutes after reaching this temperature a stop-cock with a small orifice is opened which lets out a vapor having the odor of broth; but some seconds after, there issues a white liquid which is nothing but the artificial milk. After this milk has passed out, the digester contains only the meat, the boiled bones, and a soup of inferior quality.—

The artificial milk resembles milk in color, consistence, odor and even taste. But in composition it is different; for it is only an emulsion produced by the fat mixed with the water by means of gelatine. Although the name artificial milk is not proper, it has some nutritious qualities, and for this reason it is now under trial at the hospitals of Paris.

OBJECT AND EFFECTS OF IRRIGATION.

The purpose of irrigation is not only *moistening*, as many farmers may think but chiefly *manuring* by means of irrigation; dam up a little stream, and make a small ditch along the higher part of a piece of land, so as to cause the water to overflow; in the immediate vicinity of the ditch the grass will grow a great deal longer and faster than at some distance from the ditch, where the moistening part had been executed to the same degree as above. showing that the water had left its manure at the first contact, with the surface of the ground. In laying out the ditches for irrigation make many ditches, instead of a single one. There is no loss even by the greatest number of ditches provided they are put in the right place. The distribution of water, and the different modes of arranging the land for irrigation and drainage, depend on the shape or the surface of the ground, &c., and require a very fine judgment, and at least some knowledge of leveling and surveying. The rain water has no manuring effect on the soil; but its great efficacy is its dissolving quality, by which it makes the manure fit for feeding the vegetables. The water of running streams, led on the land for irrigation, fulfills two important conditions, namely that of yielding manure, and is therefore superior to rain water for irrigation. Some have contended that rain water contains a little ammonia, and that it therefore possesses fertilizing properties, but the most refined analysis has failed to prove this.

THE CEDARS OF LEBANON.

The following is an extract from a letter of H. S. Calhoun, missionary, in the last number of the *Bibliotheca Sacra*—

"The region of the Cedars—ten hours ride south east from Pripoli—is not far from 7000 feet above the level of the sea, and is surrounded on the north, east, and south by a still higher range of mountains. It is open towards the west, and looks down upon a vast mass of rugged mountains, and beyond them to the 'great and wide sea.' The scenery is most majestic and impressive.

The soil in which the cedars grow, is of a limestone quality, and so exceedingly rough and stony as to be entirely unfit for the plow. The whole region around is covered deep with snow, usually from early in December to the middle of April.—But though the snow is so abundant the cold is not so intense, as, for instance, in New England.

This region around the Cedars is too cold for rain, and hence almost the entire discharge from the clouds is in the form of snow, while at the same time, as far as I can judge, from the reports of the people inhabiting the nearest village, the ice is far less than with you, thus indicating a less degree of cold.

The Cedars are few in number. I have been counting them to be about four hundred. Our actual count was three hundred and ninety-three.—Many of them are two feet, a less number three feet and even four and five feet in diameter. Several of them are from six to ten feet. One that I measured this morning is forty feet in circumference, say two feet above the ground. A little higher it sends forth five immense branches, each from three to five feet in diameter, which shoot up almost perpendicularly, thus, in reality, constituting five trees of great size. Many of the cedars are double, and a few even triple and quadruple; that is, from one root apparently there grow up two or more trees, united as one for a few feet, and then separated by a slight divergency, thus forming independent trunks, straight and beautiful.

As to the age of these trees, I do not know that history says much. In a chip two inches thick I have counted, to day, sixty circles; which I believe you, who know better about such matters, would make equal to sixty years. A tree of six feet in diameter, according to this calculation, would be nearly 1100 years old. But as the chip alluded to indicates a very flourishing growth, and as the yearly increment becomes less as the tree increases in age and size, it is quite probable that a tree of six feet in diameter may be 2000 years old. At this rate, the giant tree mentioned above has probably breasted tempests of more than 4000 winters; thus making its origin nearly cotemporary with the flood. Travelers have been in the habit of cutting their names on these larger trees. One date I find as far back as 1673, at which time as appears, the circumference of the tree must have been nearly as great as at present. From such dates as these we must inevitably refer their origin to a remote antiquity."

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., FEBRUARY, 1857.

CALVERTS BEE PALACE.

Mr. GEO. CALVERT, of Upperville, Fauquier Co., Va., has during the past week or two, exhibited, in this City, his "Improved, Common Sense Patent Premium Bee Hives." So far as we can learn, they have commanded universal admiration; and a number of our citizens have purchased rights and intend to put them immediately in use—being satisfied, from ocular demonstration, of their superior advantages. The Palace is a neat little house—the construction of which costs 12 to 15 dollars—with provision for two brood hives and several store rooms, or glass boxes, which the bees fill with the product of their skill and industry, amounting to four to six times more, as several respectable gentleman testify, than has ever been made, in the same length of time, in any other kind of hive.

The advantages of Mr. Calvert's Palace, are numerous—greatly facilitating the making of pure virgin honey, the expelling of robber bees, the exclusion of bee moths, the preservation of an even temperature in the interior, the insuring perfect cleanliness, the ease in hiving swarms, the facility of taking the honey without disturbing a single bee, and the greatly increased quantity of honey made in a given time. These advantages appear to be, in Mr. C's Palace, superior to those of any other hive in use.

Our people would do well to provide themselves with this valuable invention, and commence the raising of bees and honey for both family use and market. Every family ought to go at it as a business. Nothing would pay better. "Surely," (says the Rev. H. W. Dodge, "if the public mind can be roused and be enlightened on the subject, honey must soon be added in large quantities to the list of our exports, as well as greatly cheapen the expenses," and, (he might have added,) increase the luxuries, "of living." We see it stated in our exchanges that a Mr. Quinby, of St. Johnsville, Montgomery county, N. Y., sold last year over 20,000 lbs. of honey, raised chiefly by himself; the Houston Bulletin states that one gentleman in Lamar county, Texas, derives sufficient profit from his bees to buy him a field hand every year; and, we

doubt not, that honey can be raised with greater ease anywhere in North Carolina than in New York. Several millions of dollars might be annually made in this State on honey.

For example: take 12 counties, with an aggregate of 175,292 population—allow 7 persons to each family, which will give an aggregate of 25,041 families—assign an average of ten hives to each family, estimate a profit of \$5 per hive; and fifty dollars, by each family, will be realized for honey, made with no expense and but little labor, except the original outfit—making an aggregate annual amount, by the 12 counties, of \$1,252,050 for honey; and 8 times twelve, which is near the number of counties in the State, would give as the annual income of the State for honey, the handsome little sum of twelve millions of dollars? This calculation is made upon the supposition that the honey will only sell for 10 cents per lb. Let the prices in foreign markets be obtained, and the amount would be greatly augmented. In London the prices vary, according to quality, from 3s 6d sterling, 2s, 1s 6d, to 1s 8d per pound.

THE CHINESE SUGAR CANE.

Messrs. Jewett & Co., Boston, have published a pamphlet, by Mr. James F C yde, of Mass., on the "Chinese Sugar Cane," the method of cultivating and manufacturing it. The author has collected and condensed from authentic sources, accounts of practical experiments both in the cultivation and manufacture of that plant, made in various parts of the United States. The seed of the Chinese sugar cane was very generally distributed about the country last year, and the results of some of the experiments made in its culture will be read with interest by many persons.

AGRICULTURE.

We have already announced the handsome donation of the President of the Virginia State Agricultural Society, Mr. Cooke, for the endowment of an agricultural professorship in the University. It is stated that Jas. C. Bruce, Esq., of Halifax, gave (conditionally) to the Union Agricultural Society, at its recent meeting in Petersburg, the sum of ten thousand dollars for the purchase of land to be converted into a model farm.

MANURE CARTS.

These necessary articles for every farm, are now manufactured in this City, by Mr. PERKINSON; at whose shop, all who are in want can supply themselves. We doubt not they are well put up, and admirably suited to the purpose for which they are intended.

THE CAMELS ON THE WESTERN PLAINS.

The accounts received from Texas in relation to the experiment of domesticating the camel for the use of the army of the United States, on the southwestern plains, continue to be most encouraging. The animals are in the care of a company of the Second Regiment of Cavalry, stationed at Camp Verde, Texas, where large stables have been recently erected by the troops for their accommodation.—It has already been ascertained by repeated experiments that more has been done in the way of transportation by six camels in five days, than by two mule teams in ten days. The camels make a trip from Camp Verde to San Antonio (sixty miles) and return in six days, with more load than the two wagons can possibly carry, and the wagons usually take ten or twelve days for the trip.

SELF WEIGHING COAL CART.

A coal cart which weighs its own load is about to be introduced into general use in Philadelphia. The body, which is of the ordinary form, rests upon that which is attached to the axle of the wheels. The box of the cart may be raised above the truck below by a lever, which works by a handle in front. When thus elevated, the body is supported squarely on four points, and the load can then be weighed by the following process: a lever extends from the stationary frame, up the side of the moveable box the scale box and is connected by a link to the short end of a weight beam, and when so raised the body of the cart, with its contents, may be weighed by adjusting the weight on the beam.

The whole contrivance is simple and highly efficient. It completely protects the consumer of coal against the fraud of short weight, as every one, may have every load weighed at his door, or, if he pleases, he may weigh it himself.

Dr. J. H. Griscom, the great Ventilator, says:—"Persons should be careful to live in a pure atmosphere. Beside the impure air we exhale, there are 2,800 pores on every square inch of the body, and to a body of large size there are 2,500 square inches; and these multiplied make 7,000,000 of pores. There is a sort of drainage pipe in the body, which sends out matter as well as gas, and this pipe is calculated at twenty eight miles long. The particles of matter which are sent out and which do not dissolve, are so numerous that in China where the houses are low and a great many persons are in the habit of assembling in one room, it has been discovered that, after fifteen or twenty years, these particles adhere so much to the ceiling of the room that the farmers will

contract to put up a new ceiling if they are allowed to take down the old one, so valuable has it been for manure,"

PLOWS MANUFACTURED IN RALEIGH.

We are gratified to be able to call attention of the people of the State to the fact, that Messrs. BURNS & TOWLES, of this city, are now extensively engaged in manufacturing, complete, four or five different kinds of the most improved cast plows.—Farmers from all quarters can here supply themselves with *home made* plows of the best and most substantial kind. This is an important step, and will, we hope, be duly encouraged by the public.

CHINESE PROLIFIC PEA.

We invite attention to the advertisement of Messrs. Plumer and Leitner, in this No. of the Arator, offering, as Agents, the Chinese Prolific Pea to the public. We learn from the Southern Cultivator, that the superior qualities of this Pea are proven by witnesses of the most reliable character. Our readers would do well to avail themselves of the opportunity now offered to secure the seed, and give them a trial.

THE DEPTH OF THE OCEAN.

The U. S. Steamer Arctic has returned to New York from a voyage across the Atlantic for the purpose of sounding its depth. She sounded the Atlantic all the way across, finding the greatest depth 2,070 fathoms (more than two miles.)

The bed of the ocean, in the section traversed by the deeper part is a very fine mud, of a mouse-gray color, so soft that the sounding instruments frequently sank several feet in to the mud. They brought up specimens of bottom, at every sounding in quills which were attached to the end of the sounding instrument. Towards the shores on each side, this mud changes into a fine green ooze.—No other substances were met with, no rock, nor anything that might prove fatal to a telegraph wire. There seems to be now nothing to hinder the great work, to unite Europe and America by means of a telegraph wire; an undertaking so grand that few thought it possible. The whole distance across was found to be 1,640 sea miles, from St. John, N. F., to Valentia Harbor, Ireland.—The greatest depth was found nearly in the centre between these two places. The profile of the Atlantic bed, on this route, is of by far easier grade than many of our railroad profiles.

SAVE THE OLD BONES.

The value of bones in almost any form as a manure for farms and gardens, should induce all to

save them for this purpose. When applied in form of bone-dust, their fertilizing properties become more immediately apparent. But even when simply broken, and in this manner applied to fruit trees, grass lands, and most kinds of vegetables, nothing better can be found. We particularly recommend broken bones as a superior dressing for vineyards.—*O. V. Furmer.*

Bones should be placed in a heap of horse manure in the fall, and they will become soft and available by the next spring. Their intrinsic value is more perhaps than that of any other article.—Do not consider them of little value because they are not bulky. One bushel of bones well decomposed is worth a cord of manure for every kind of crop. Bear this in mind.—*Ed.*

OUR EXCHANGES.

The late improvements of some of our Exchanges merits a special notice.

THE GREENSBORO' TIMES, a large weekly family paper, neutral in politics, and devoted to literature and general intelligence, has been much improved, and ought to be encouraged by the Southern public in preference to Northern periodicals, both on account of the tone and sentiments inculcated and the superior character of the reading matter it contains. The Editors are laboring to make it a Southern newspaper, worthy of Southern patronage, and they are succeeding admirably.

THE SPIRIT OF THE AGE, is increasing rapidly in interest, and, we are gratified to learn, also in patronage, since the gifted Editress has taken a regular department in that valuable journal. Long may it flourish, and great may be its influence in the noble cause of Temperance!

THE SOUTHERN PLANTER, Richmond, Va., has been enlarged and otherwise improved. It is an excellent agricultural paper, and its matter is well suited to an extensive portion of our own State. Success to its efforts to do good and to its pecuniary operations.

THE AMERICAN FARMER, excellent ever since we have known it, is improving all the time. It deserves, and we hope will gain a wide circulation among us.

THE AMERICAN AGRICULTURIST, New York, is a very valuable agricultural journal, published weekly and monthly, and has recently been greatly improved. No one can ever regret subscribing and paying his money for it.

THE WORKING FARMER, also published at

New York, is a very able scientific as well as practical work, which every agriculturist ought to take and read.

THE NEW ENGLAND FARMER, Boston, is an old and well established work, of general interest and value.

THE HOMESTEAD, Hartford, is a valuable work, lately much improved.

THE COUNTRY GENTLEMAN, Albany, N. Y., is one of the neatest, and most spirited weekly agricultural journals published in the country.

THE SOUTHERN CULTIVATOR, Augusta, Geo., is a very able and valuable monthly, devoted to agriculture in the South, and is peculiarly suited to the latitude of North Carolina. We hope our people will cultivate its acquaintance.

THE LITTLE PILGRIM, edited by Grace Greenwood, Philadelphia, at 50 cents a year, is well adapted to the taste and wants of children, and ought to be every where circulated among them.

THE RALEIGH REGISTER, has changed hands, and is much improved by Mr. Syme, its present worthy proprietor. We wish him pecuniary success. Of course, we say nothing of politics.

THE N. C. CHRISTIAN ADVOCATE, a valuable and able home religious journal, we are glad to learn, is constantly on the increase.

FARMING IN WINTER.

What shall a farmer, as a farmer, do in the winter? He has much to do in the winter peculiar to his profession—in his house, in his barn, in the woods, and at market. There is no need of his being idle. He has a great deal to do for the promotion of his interest. In the first place, if the rigors of the season drive him indoors let him think himself a lucky man; for it is to the family that his most important duties are due. Has he a wife and children? Let him make the first his companion, friend and equal; and let him devote his thoughts and labors for the instruction and improvement of his children. See that they are well and tidily clad. See that they go to school, and are furnished with suitable books. See that their winter evenings are employed in useful reading and study, with innocent amusement intermixed rather than in visiting the haunts of dissipation and ruin. Let the winter be devoted to the duties of his fireside, and the calls of social intercourse.

Having every thing in order in the house, both as it respects the physical, moral and intellectual wants of his family, let his next attention be devoted to the domestic animals of the barn and fold.

See that they are well fed. Keep the stalls clean. Blanket the horses; and if you do the same to the cows so much the better. Make sure of as warm a place for them as possible. Give them straw beds to sleep upon. Comfortable animals will thrive best, and give back the best returns.

In the day time, when your children are at school, cut and haul home wood enough to keep a years stock of seasoned fuel beforehand. This is economy. In short every farmer has enough to do in winter; and that, well done, is often the most important and profitable labor of the whole year. Keep stirring and do good.—*Maine Farmer*.

CHINESE SUGAR CANE.

We have the following from an esteemed correspondent personally acquainted with the facts. It has before been intimated that this is the same with the *Holcus bicolor* or Chocolate broom.—This is in proof that it was distributed under this name by the Patent Office. Some varieties of the chocolate broom are very sweet, others less so.—We are under many obligations for this interesting statement.—*Homestead*

MESSRS. EDITORS:—There are various attempts being made to introduce the culture of Chinese Sugar Cane into the Northern States—with what success remains to be seen. A plant resembling the description of this in the papers at the present day, was grown in East Windsor, Hartford Co., Conn., nearly forty years since, under the following circumstances. Mr. Samuel Bartlett, Senior, a resident of East Windsor, then about seventy-five years, old, was furnished by Hon. Henry L. Ellsworth, late Commissioner of the Patent Office, then a resident of Hartford, Ct., with a small quantity of seed that came from the Chinese Empire, requesting him to experiment with it as to its adaptation to the climate, &c., as he was a man rather inclined to such things.

The seed was planted, making about ten or twelve hills; the seed matured was saved for another year's growth. The name as furnished to him with the seed was *Holcus bicolor*. The second year he planted about one eighth of an acre; the stalks grew about twelve feet in height, tassal resembling broom corn, but shorter, and standing erect, even in a storm; the seed jet black, smooth like a flax seed, and about the size. The seed ripened well. The stalks were ground in a common cider mill, the juice submitted to some kind of process, and found to contain sugar in large quantities. The seed was ground and bolted, and

used in various ways for culinary purposes, and was also fed to animals with success. It was the opinion of Mr. Bartlett that the seed would furnish an abundance of food for man and beast, and the time would come when the stalk would be raised to furnish sugar in the Northern States.

C. H.

WHY ARE GARDENS MORE PRODUCTIVE THAN FIELDS?

Because in many instances, the gardener has unwittingly subsoiled his garden with the spade. There are frequently good crops of vegetables made in our dry and burning summers.

What think you kind reader, has produced these? Not manure alone, for unless the manure was buried deep in the soil before the seeds were planted, it had proved an injury.

The gardener is anxious to get an early garden, his manures are applied early, and as the patch is too small to plow it is turned under with the spade, Now had it been trenched two spades deep it would have produced better, and as the truck is small, the hoe is substituted for the plow in the after culture. And this simple and natural method of culture is the reason why the garden, in a dry season, is more productive than the field. When a more general system of sub-soil plowing before the planting, and surface culture afterwards shall be adopted by our planters the crops of the south will be doubled from the same land. We the past season planted some acres in corn; it is an uncommon productive variety. We subsoiled the land thoroughly before planting the seed, and never put a plow into the field after the corn was six inches high, but stirred the soil frequently with a horse hoe, an instrument that answers all the purposes of the plow without cutting the roots of the corn. The drought was very severe, so much so that one of my neighbors cut up his entire crop for fodder. My corn has no doubt suffered materially in the product. Yet I have measured two acres which has turned me out one hundred and eighty bushels shelled corn to the two acres. Now although it is a most wonderful corn, yet had we not subsoiled the land, and given it only surface culture afterwards, we should not have raised the crop that we have. Will it pay to cultivate a field upon the same principles of the garden? If it is economy to cultivate a garden well, it surely is economy to cultivate a field well, and this we believe the true reason why gardens are more productive than fields.—*Soil of the South*.

WHAT IS A FINE CROP.

We take the following paragraph from an article in the March number of DeBow's Review, entitled "The duties of an overseer."

"In conclusion, bear in mind that a fine crop consists, first, in an increase in number and a marked improvement in the condition and value of the negroes; second, an abundance of provisions of all sorts for man and beast carefully saved and properly housed; third, both summer and winter clothing made at home; also leather tanned and shoes and harness made when practicable; fourth an improvement in the productive qualities of the land, and in the general condition of the plantation; fifth the team and stock generally, with the farming implements and the buildings, in fine order at the close of the year; and young hogs more than enough for next year's killing; then as heavy a crop of cotton, sugar, or rice, as could possibly be made under the circumstances, sent to market in good season, and of prime quality. The time has passed when the overseer was valued solely for the number of bales of cotton, hogsheads of sugar, or tierces of rice he had made, without respect to his other qualifications."

From the Southern Cultivator.
HAY MAKING IN THE SOUTH.

A Brief Essay, read before the "Beech Island Farmers' Club," at the October Meeting.

To the Members of the Club:

GENTLEMEN—As it is expected that each member of this club shall make a report of some experiment, I take this opportunity to present the following, on Hay making:

About the first of May I had a ten acre lot of good river-bottom land plowed up, with double plows, from 8 to 10 inches deep; the land was then well harrowed with a good two horse iron tooth harrow, across the plowing, and then rolled with a cast iron two horse roller, in order to make the surface as smooth as possible. The land was soon covered with crab-grass. In consequence of the hot dry weather, I had almost despaired of realizing a crop; but after the heavy rain which fell about the first of September it revived and grew off rapidly, and continued to improve until the latter part of September, when it was from two to three feet high, at which time I cut it with scythes. The plan I adopted for curing, was, to have what was cut in the morning turned over and stacked up about four or five hours after it was cut, and that part of it had from 4 to 6 hours sun on it was then put into common size shocks, and remained

until the next day about ten o'clock, or until the dew was entirely off, at which time they were again opened and the hay again spread, and remained so until evening, when it was put into shocks again, and remained so until the dew was off the next day, when they were opened and spread as above stated; in the afternoon, such as was sufficiently cured I had packed in the barn.

I measured one acre and obtained from that 7,675 lbs. of well cured hay, which I sold for 75 cents per cwt., in Augusta; it was weighed at the City Scales, and at that low price amounted to \$57 56. At \$1 per hundred, the amount would have been \$76 75; at \$1 25 per hundred, \$95 93; and at \$1 50 per hundred, \$115 12. These prices are not unfrequently paid for an article in no way superior. I think there were three or four acres in the lot as good as the one I measured; the balance not more than two thirds as good. At the rate sold, the whole lot would amount to \$460; and of course still higher at increased rates, as shown above.

I would simply call attention of the members to the fact that this crop has been made under unfavorable seasons, and if sold at the average price that Northern hay commands in Augusta, which is about 1\$ 50, it would amount to \$620, or \$62 per acre.

My impression is that two crops may be taken from the same land by commencing earlier in the season, and there is no crop more profitable with the same amount of labor.

All of which is respectfully submitted.

JOHNATHAN M. MILLER.

Goodale, near Augusta, Ga., Oct., 1856.

FROM every direction we hear of terrible freshets consequent to the late thaw and rain. All the principal rivers West and North of us have been swollen, and in many instances have done serious damage.

PREVENTIVE OF POTATO ROT.

When the rust which always precedes the rot is first discovered upon the leaves, cut the tops even with the ground, and cover the stump, immediately lightly with dirt. The roots continue to grow the usual time, ripen well, and are free from rot. If the stumps are not covered, the root ceases growing, but when covered the top will grow anew up through the covering of the stalk, and be green when cut. Potatoes treated in this way have escaped the rot, and grown full size, while others in rows by their side, not cut, have nearly all rotted.—G. L. HOSLER, in *Maine Farmer*.

CHINESE PROLIFIC PEAS!

THE GREAT FORAGE PLANT AND RENOVATOR OF SOUTHERN LANDS.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever introduced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pods, each pod containing 10 to 12 peas, and is of course far more *easily gathered* than any other.—The vine never becomes hard, but is *soft and nutritious* from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed *for the table* in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

Fort Smith, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is *beyond anything in the way of a great yield I have ever known.*

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Goree, of Arkansas, estimated the yield in Peas or Hay at *"five times that of any other Field Pea he had ever seen planted."* W. R. Lee, Esq., says he *"has never seen anything to equal it,"* and that it should *"supersede the use of every other,"* and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw *"that pea-vine,"* and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.
B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says: "If the Southern Farmers will give it a fair trial, they will find it to be *the greatest Pea both for table use and for feeding stock,* now known. They fatten hogs faster than anything I have ever tried. On the 1½ acres Mr. Douglass had in cultivation last year, there was *at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c.*

For further particulars, see Circulars furnished gratis by the Agents.

We are prepared to send out a *limited quantity* of these Peas, put up in cloth packages to go by mail.—They will be forwarded, *free of postage,* to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the *genuine seed.*

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

* * Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount, if their orders are forwarded *immediately.*

Feb. 57.—3m's

CURE FOR FROST BITE.

The following is said to be a rapid and effectual cure for frosted feet:

"Heat a brick very hot and hold the feet over it as closely as they can be held without burning.—Cut an onion in two, and dipping it repeatedly in salt, rub it all over the feet.—The juice of the onion will be dried in to the feet, and effect a cure in a very short time.—If this be done a few times it will certainly remove the frost and completely restore the feet."

LEAF MANURE.

If you have a large pile of leaves, which you would convert into manure, adopt the following process:—Slack fresh lime with brine till it falls

to a powder. Turn the leaves with a fork, and sprinkle this powder even among them, at the rate of four bushels to a cord of leaves. Turn the heap now and then, and you will soon have a noble manure. Nothing is better applied to fruit trees.

VALUABLE RECIPE.


Mr. A. Bronson, of Meadville, Pa., says, from fifteen years' experience, he finds that Indian meal poultice, covered over with young hyson tea softened with hot water, and laid over burns or frozen flesh, as hot as can be borne, will relieve the pain in five minutes. If blisters have not arisen before they will not after it is put on, and that one poultice is generally sufficient to effect a cure.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,

 WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking, turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

FARMER'S HALL, RALEIGH, N. C.



The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as JENKINS' OLD STAND, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECORDS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.

The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good

and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, January 19, 1856.

FINE FRUIT TREES.

30,000 FINE FRUIT TREES, CONSISTING of Apples, Pears, Peaches, Plumbs, Apricots, Nectarines and Cherries, at their Nurseries at New Garden, Guilford County, and Cane Creek, Chatham County, are now ready for sale. Persons wishing to plant this season, should send on their orders very soon. Direct to Joshua Lindley, New Garden, Guilford County, N. C., or to Owen Lindley, Cane Creek, Chatham County, N. C.

JOSHUA LINDLEY.

OWEN LINDLEY.

Nov. 1, 1856.

2t.

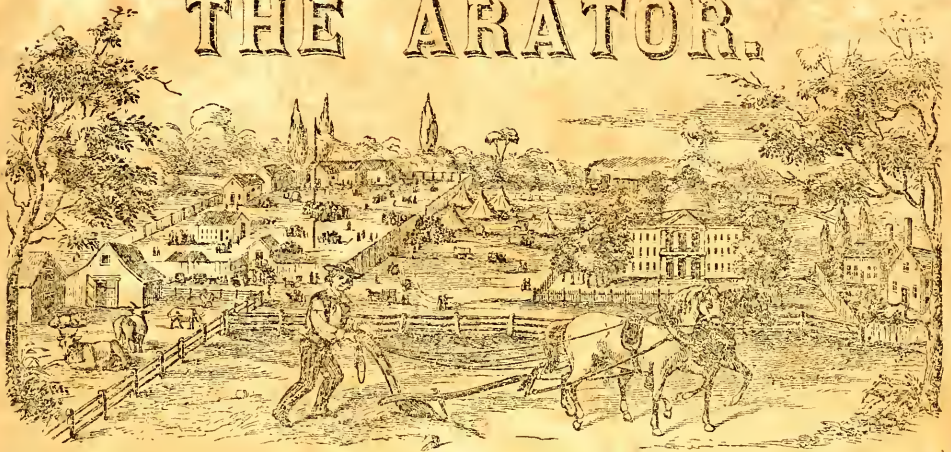
PAYMENTS FOR THE ARATOR SINCE JAN. No.

T C Axton, B P Bradley's estate, E Colburn, Hon. John M Dick, J J Davis, John Ellett, Col. E W Fonville, M A Gregory, R H Hicks, Wm Lea, A Monk, John A Nicholson, Wm H Robards, jr., P Rand, Jas B Shepard, D W Spivey, J H Small, Dr J A Russell, H B Watson, H S Woods, G H Wilder, John B Yarbrough, one dollar each. Henry Porter, adv. 4 50, subscription 2 dollars. John Collins, Agent, five dollars. H T Clark, John W Harris, and Rufus H Page, two dollars each.

INDEX TO FEBRUARY NUMBER.

Answer to Little Farmer, 681. Advantages of subsoiling, 682. To destroy the Bark Louse, 683. Improving Old Fields 683. Fine Stock 684. How to lay out Surfaces, 684. Do our lands need Lime? 684. Cheap Mill for Sugar Cane 686. Scarlet Fever 686. The wine test of Mr Art 686. Agriculture at the South 686. Turnips for Hogs 687. Climates of the United States 687. Effect of Pumpkin Seed on Cows 588. Ashes of wood a fertilizer 688. Sensitive faculty of the horse's foot 689. Health of Americans 689. Scientific experiments on Dogs 689. Stringhalt 689. Cows for work 690. Reproductive power of Filth, Milking, Items for all, 690. An important Movement, Plowing by Steam, 691. Exhausting the Soil, Winter Plowing, Hereford Cattle, Clover, 692. Management of Manures 693. The origin of Wheat, Phos. Insects; Artificial Milk 695. Irrigation, Cedars, 696. Bee Palace, Agriculture, Manure Carts, 697. Camels, Pows manufactured in Raleigh, Chinese Prolific Pea, Ocean, 698. C Sugar Cane, 697, 698. Bones, 698. Gardens, 700. Our Exchanges, Farming in Winter 699

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. II.

RALEIGH, MARCH, 1857.

NO. XII

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more, at the same rates.

For the Arator.

Mr. Editor: I have heard and read a great deal about sub-soil plowing almost every where except in North Carolina. Few, very few, it seems, have tried the important experiment here. It is mortifying to reflect upon the tardy movements of our people, who wrap themselves up in the mantle of ignorance, and exclude from their minds the rays of light which pour in from all quarters, by stupid and obstinate resistance to all book farming. We are thus more than a quarter of a century behind our haughty neighbor on the north. The improved implements and methods of cultivation which I saw in operation there thirty years ago, are just coming into general use among us. Why has the wave of improvement been so slow in its progress? Because it was broken and driven back by the rocky and barren shore of hoary error. Now, then, can it be hoped that our

agriculturists of the present generation will adopt the subsoil culture? A few in North Carolina have tried it successfully; but it is feared an age will roll by before the example will be followed by many. Its great utility has been demonstrated in other States, and in the most satisfactory manner particularly on the farm of Prof. Mapes, in New Jersey, and that of Mr. Gifford, New York. The Committee, reporting on the Professor's, say:

“Large numbers of boulders occupied the surface soil, which have been removed; the better portion of the land has been underdrained, and the whole thoroughly sub-soil plowed to a great depth. This free admission of atmosphere into the subsoil, has caused a disintegration of the red kells, and now the whole surface to a great depth is in the finest tilth. From the depth of the disintegration and the influence of the under drains, securing circulation of atmosphere and deposit of moisture by condensation, no drouth is ever felt, [mark this!] all of which was fully set forth by the Committee who visited this farm last year, and who reported that the ‘fences seemed to be a boundary to the drouth.’”

The report of this Committee appears in the *Working Farmer* for the month of March, and you cannot do better service to your readers, than to publish it *in extenso*. It is replete with instruction of the highest value on various branches of our rural vocation. Prof. Mapes raises 110 bushels shelled corn to the acre, 1000 bushels carrots, &c.

The farm of Mr. Gifford is mostly composed of heavy, whitish clay, extending to a depth of from twenty to forty feet, so that the turning of a subsoil of a different character could not be appealed to for the melioration of the surface-soil; yet with little manure, this land was made highly productive by the use of a deep tiller plow (Knox's patent V.) In his preparation for potatoes, Mr. Gifford says:

"I ridge my land as high as I can get it in the fall, then run the lifting subsoil plow between the ridges, using plenty of coarse manure. In the spring the ground is thoroughly plowed, harrowed, and drills for potatoes struck out by running a furrowing plow both ways in each, then the subsoil plow in the bottom, which slightly elevates the soil and leaves a furrow three inches deep for the reception of potato seed. Cover even with the surrounding surface, and add a coating of coarse manure to prevent the incrustation of the soil during the dry portions of spring and summer, and the loss of moisture, which is always injurious to our stiffest clays. After the plants are well up, I run the subsoil plow once about between the rows, alternating with the cultivator, and deepening the subsoil cut at each time, until the plants get too large. I am confident that the use of Mapes' Lifting Sub-soil Plow has nearly, or quite, doubled the amount of my potato crop, where used as stated above, and in comparison with soil treated in the ordinary way. I am very certain that the judicious use of that plow will tell handsomely at the harvest of any crop.—My soil has become rich and pulverulent beyond my expectation, during

the short time I have availed myself of its services."

Many others bear the same testimony; but why multiply proofs for those who are designedly, doggedly and desperately blind? Pile evidence, like Pelion upon Ossa, until the overwhelming mass overlooking the clouds, with its luminous summit pierce the heavens; its moral grandeur, weight and influence are unseen, unfelt, unheeded by them.

It is indeed passing strange, that men remain so long in voluntary ignorance of things so vitally connected with their welfare; but its solution lies in the proverbial folly of mankind. Men surrender reason, common sense, and every principle of higher intelligence to the despotic sway of prejudice; and this prejudice is as much controlled by the opinions and practice of their fathers, (whose ignorance was excusable for the want of light,) as that of the Christian world was, for many ages, while bound in superstitious veneration to that dark, confused pagan genius, Aristotle—"a veneration which was carried so far, that when metaphysical questions were disputed in the schools, questions on which every one ought always to have liberty to speak his opinions; when they were examining whether there were a void in nature, whether nature abhorreth a vacuum, whether matter were divisible, whether they were atoms properly so called: when it could be proved, in disputes of this kind, that Aristotle was of such an opinion, his infallibility was allowed, and the dispute was at an end." This slavish surrender of judgment to one man, is not more surprising than the blind and supple unanimity with which a large class of farmers implicitly rely upon the modes of culture of their fathers, and still persisted in by their degenerate sons. There is a class among us, 'tis true, of another spirit, who are actively and nobly engaged in the work of improvement; and their efforts and example will slowly, but ultimately, it may be hoped, work a regenera-

tion of the State. But there is but little hope for the great mass of the farmer. Yet it were well for such purblind, self-stultified folks if the scales could be torn from their eyes. This deep stirring and fine pulverising of the soil, you may depend upon it, is one of the very things exactly suited to, and much needed in, North Carolina. But neither you, sir, nor any one else in your day, will be able to convince this class of her farmers of the important truth. Yours. JEFFREYS.

In compliance with the request of our spicy correspondent "Jeffreys," in the foregoing communication, we give below the interesting report on Professor Mapes' Farm.

OUR FARM.

The following Report of the Committee which visited our farm in September, is just received, and we take pleasure in placing it before our readers.

[*Ed. Working Farmer.*]

REPORT.

The Committee appointed by the Farmer's Club of the American Institute, to visit the farm of Prof. Jas. J. Mapes, near Newark, N. J., on the 6th of September last, beg leave respectfully to report, &c.

The farm has been occupied by Prof. Mapes for ten years, during which time it has gradually increased in size, now embracing 93 acres of upland, and devoted to various crops. When this farm comprised but thirty acres, and was visited by some of the members of the present committee, it was devoted chiefly to garden crops, and under the old system of garden cultivation, by hand hoes, forks, spades, etc., required from ten to 25 hands; since which time, by the introduction of new tools, the farm, now three times as large as it then was, is cultivated in the most thorough manner by only seven hands.

The Soil and its Preparation.—The soil of this farm varies in quality—many of the fields being distant from others—chiefly, it may be said, to consist of red-kellis hard pan sub-soil, with a

thin clayey mould on top—the sub-soil of a very tenacious quality, and difficult of manipulation: indeed, without the use of the peculiar tool for its disturbance, it would seem to be impracticable. Large numbers of boulders occupied the surface-soil, which have been removed; the better portions of the land have been under-drained, and the whole thoroughly sub-soil plowed to a great depth. This free admission of atmosphere into the sub-soil, has caused a disintegration of the red kellis, and now the whole surface to a great depth is in the finest tilth. From the depth of the disintegration and the influence of the under-drains, securing circulation of atmosphere, and deposit of moisture by condensation, no drouth is ever felt, all of which was fully set forth by the committee who visited this farm last year, and who reported that the fences seemed to be a boundary to the drouth.

Manure Shed.—Near the stables is a shed under which the solid manures of the stables are placed each day, the fluid manures running from the stables to a cistern which receives the drainage from the manure heap. This cistern is supplied with a pump, by which its contents may each day be pumped on top of the manure heap, returning by filtration to the cistern, and preventing all fire-fanging or loss of ammonia from the heap. This arrangement does away with the necessity for forking over the dung heap, as it is never dry, and the soluble portions of each part are sub-divided through every other part, without any disturbance other than that consequent upon the filtration of the water itself, while the frequent changes of air and water supply all the necessary chemical conditions to secure decomposition without loss of ammonia. We learned that occasionally a small quantity of sulphuric acid was added to this cistern, to change the carbonate into the sulphate of ammonia, and that occasionally a small quantity of Nitrogenized Phosphate of Lime, in a soluble or semi-soluble state, was also added.

Beyond the manures of the farm, which are entirely insufficient in quantity to produce the vigorous growth named by your Committee, there are used, in variable quantities of 100 to 600 lbs. per acre, of either Mapes' Nitrogenized Super-phosphate of Lime, or the cheaper Potash Phosphate, and in all cases divided with charcoal dust or decomposed salt marsh muck, of which there are 50 acres, before being applied to the soil, which is mainly done during the disturbance of crops, and but in part before seeding or planting. No other artificial manures are ever used than the phosphates above named, and in some parts of the farm no stable manures have ever been applied. The cost of manuring seems to be much less than if stable manures without cost, except for carting and spreading, were applied. Those made on the farm are cared for in the best manner, but none others are ever brought to the farm, tho they can be had at Newark, two and a half miles, at \$1 per cord.

Improved Tools.—Of these is a great variety; some distinctly labor-saving, while others embrace this quality in a less degree, but perform the work more perfectly and in less time, than those formerly in use.

Professor Mapes has found practically, that a few dollars expended to produce a tool precisely adapted, even to the working of but one kind of crop, if labor-saving or capable of rapid use, was profitable in the end, as it enabled all the work which should be done in early spring, or any other season, to be then done, and not an inappropriate time. The motto of the farm is "*never use a dull knife.*"

Among these tools are various double mould-board plows for banking celery, and other uses. Some of these have cut or open mould-boards, permitting the disturbed soil to pass through for special uses, etc. Varieties of horse tools for weeding to different depths, with means for separating weeds from disturbed surface-soil instead of replanting them; seed sowers of various

kinds; dibbles, spuds, etc.; earth borers for post holes; planting tubes; digging forks of superior strength and adapted to various special uses; draining tools; potato diggers, etc.; liquid manure carts, with sprinklers when required. The more important, however, of the improved tools, are the following:—

Mapes' and Gibbs' Digging Machine.

This implement the Committee saw in use, and had every reason to be satisfied with its performance, as it leaves the soil in better tilth and to a greater depth, than can possibly be brought about by plowing, harrowing and rolling. This machine may be worked by a pair of oxen or mules, and will disturb as much soil in two hours to a depth of sixteen inches, as can be disturbed in five hours by the same team with any plow to the depth of eight inches; or, differently stated, it will disturb five acres to the depth of sixteen inches, in the same time that the same team can plow two acres to a depth of eight inches. The soil is left in a finely divided state, and the machine may be so set, that the surface will be turned to any required depth from one to twelve inches, while the lower portion is disturbed without being elevated or mixed with the surface-soil.

Mapes' Soil Lifter.—This tool is so configured as to be easily propelled through the soil like a mole, lifting the soil for a short distance, but the resolution of the line of force being upward and outward, even this short distance of gradual lift renders the soil above it fine without material displacement.—When run to a depth of nine-teen inches under an old sod, it lifts it without turning, and the cut made by its upright part closes behind it, thus leaving the sod perfect again, but loosened to the full depth of nineteen inches. When used as a sub-soil plow it follows the surface-plow by a separate team, and going far below the track of the surface-plow, loosening not only the sub-soil, but by the slight lifting of one inch causing the loosening of the pre-

vious furrow slice; at the same time it undercuts and lifts the standing side of the furrow, so that the next operation of the surface plow is more effective, besides requiring less power. A smaller size of this tool is used to run between corn and row crops when first above the ground, lifting the rows on each side of its track without abrading the roots, and leaving the whole in fine tilth; it does not, however, remove any weeds from the surface, but rather encourages their growth in common with that of the desired crop. After its use, say ten days or less, when the ground has settled, then the weeds are all removed by another horse tool known as the

Root Cleaner.—Of which Professor Mapes has a great variety. These skim the surface, between rows, to a depth varying from two to four inches or more, by forcing a V shaped piece of steel, point forward between the rows, with a comb behind placed at an angle. The soil and weeds in passing over this comb are separated, the soil falling through, and the weeds, however small, riding over the comb so as to be left in the sun with their roots freed from soil so as to decay readily. These are of various widths and kinds to do away with hand hoeing of row crops entirely. The driver does not follow this tool so as to walk over the disturbed soil, but walks in the next row before its disturbance. With a small mule this tool is made to do the work of forty men with hoes, and in a much more perfect manner.

Knox's Horse Hoe is also an admirable tool, being a compound of the root cleaner and two small plow shares, so arranged that they can be made to throw the earth toward, or remove it from, corn or other crops. It has many useful applications, and is an admirable tool.

Pratt's Ditching Machine.—This machine, with the help of a pair of oxen or horses, will dig 75 rods per day of ditch 16 inches wide and three feet deep. Prof. Mapes has drained a seven

acre field with it the present season; the drains, however, are made five feet deep, the lower two feet being dug by hand in the usual way.

Horticulture.—In this department Prof. Mapes has made great strides.—He raises large quantities of the finer kinds of fruit for market, most of which are sold to the Broadway fruit dealers.

The Vine, and contains about 1200 vines in full bearing, and we have never seen a finer display of fruit or better wood. No disease is to be seen among the grapes, the greater portion of which are Isabella and Catawba. The other kinds cultivated embrace the following:—Norton's Seedling, Hibernians Madeira, Bland's Virginia, Charter Oak, Rulander, Portuguese Blue, Concord, etc.

Pears.—Both standards and dwarfed on quince stocks are largely raised, and we have never seen a pear orchard in so fine a condition—many of the small trees having 200 pears each of the largest size and in perfect condition. The farm has many hundred fruit trees of other kinds; Apples, Plums, Peaches, Apricots, Cherries, etc.

The Small Fruits.—Of these there is a great variety and in large quantities.

Strauberrries in many varieties, including Hovey's Seedling, Black Prince, Myatt's Eliza, Victoria, British Queen, Prolific Hautboy, Scarlet Cone, etc.

Raspberries.—Of these a fine display, and include the following kinds, viz.: Fastolf, Franconia, True Red Antwerp, and others.

Blackberries.—Lawton's, White, Black cap, etc.

Gooseberries.—100 varieties of the best kinds.

Currants.—Large Red Dutch and White Crystal.

Hot-Beds and Cold Frames.—Of these there are about 300 lights, and a laage number of cold frame shutters. Large sales are made of plants to Market Gardeners and others from these frames, and they include all the kinds of plants required.

Several acres are appropriated to Market Gardening, all of which are

worked in the best manner.

Large Crops.—Your Committee examined a corn crop, which they estimated at 110 bushels shelled corn per acre, which estimate has since been found not to exceed the fact, their visit having occurred late in September last. Many acres in carrots it was supposed would yield 1000 bushels per acre, and parsnips a still larger amount. The potato crop was large, chiefly of the kind known as the Mammoth Nutmeg, introduced some years ago by Prof. Mapes, and since improved in size so as to render them now a most desirable potato, and as yet not subject to disease. The crop we understand was 250 bushels per acre. The cabbage crop, one acre with 10,000 standing, promised to be all merchantable, and most of them of very large size.

The beet crop was very large, as well as onions, caula rapas, cauliflowers, etc.

All of which is respectfully submitted,

H. MEIGS, Chairman.

NEW ARTICLES OF CULTURE The Brown, or King Philip corn, is getting into the shade of the Rhode Island premium corn. William H. Putnam of Brooklyn, Ct, says he raised it last year, at the rate of 70 bushels to the acre, under ordinary culture. He raised both varieties, but prefers the Rhode Island in every respect. F. Trowbridge of New Haven, Ct., is engaged in the culture and dissemination of an upland cranberry brought to his notice by Prof. Shepherd of that city, who found it growing upon the barren hill sides of Canada and Newfoundland. He says the fruit is smaller and less tart than the low ground variety, but they are more prolific. Thousands of gallons have been sold in Boston this season. Mr. Trowbridge furnishes plants for 18 per hundred. A new kind of blackberry, bearing the name of 'Newman's thornless blackberry,' is talked about. It requires staking like the Antwerp Raspberry. It is said to be prolific, and as free from thorns as the common blackberry, which is not very free, according to our recollection.

For the Arator.

Mr. Editor: I have read with some surprise, the attack upon my humble contributions to your pages, by "Little Planter," of Mississippi, in your February number. Without consuming your space with preliminaries, I beg leave to pitch right into the adversary who has made such a bold attempt to alienate our people from their native soil—yes, I say native soil, and I here tell my antagonist I use the word in a specific signification. I know, in a general sense, the whole country, wherever the star-spangled banner waves in triumph, is our native land—and I glory in the enlarged and liberal sentiment, that "no pent up Utica shall bound our powers, for the boundless continent is ours;" but every man has a local habitation as well as a name, and that place where he had his birth is his "own his native land," first bounded by the homestead, next by the county, then by the State, and last by the farthest limits of the Confederacy; and he is bound in social and civil ties to these in the order in which they are here named. In the name of common fairness, how many more of our valuable citizens would he entice to the miasmatic swamps of Mississippi? How many more would he induce to sever the dearest bonds of interest and affection, and run all the imminent hazards of life, limb and fortune in the sickly and fiery regions of the South? I risk nothing in affirming that the best and most solid portion of the population of Mississippi and other Southern States, are generally those who have been drawn from North Carolina; and they ought to be satisfied with the large proportion of wealth, intelligence and moral worth which she has furnished them.

Now let us see what are the inducements offered to the emigrant spirit by the "Little Planter" of Mississippi. 1. He sets out by ridiculing the idea of improving our lands. Perhaps this satirist would feel disposed to haul in his horns a little, if he would inform himself of the increased fertility, high

state of cultivation, and permanent improvement which the science and industry of the farmers of England, of the Northern and Middle States of this Union, and even some of the State of north Carolina, have given to thousands of acres of their formerly sterile or worn-out lands; whilst even from Mississippi, where the ground is covered so deep with richness, we hear complaints of the soil washing, wearing out, and the people moving away. Why is this?

2. He parades his emporiums of commerce, of hundreds of thousands in population; vast numbers of navigable streams; rich lands, covered deep with all the elements of fertility; and superabundance of all the good things of life. This may be true; but are not his boasted emporiums very charnel houses which he dare not visit during the sickly seasons? Are not his rivers skirted with fens and bogs, which distribute noisome pestilence and death over the land? Is not the rich soil of his hills washed away? And what comfort do the good things of life afford the wretched invalid who sees Death, with quiver charged with envenomed arrows, on every side?

3. He underrates the cost of moving. By a very short method of "figuring and cyphering" "made easy," he brings out the sum total to the exact amount of "eight dollars per negro the trip"—saving and excepting "a half dime occasionally, at a bridge or ferry." In all this, he makes no calculation for the time lost (which is money), and the mishaps and losses on the way, but works out his result, and exultingly points at the insignificant amount, as if there were no obstacles to overcome, no casualties charged with expense on the route; and a man had little else to do, but "pop his whip and put out there," and make good cheer on "potatoes" and other "good things!" Did he "speak ignorantly?" Does he "really believe" the expense of removal will amount to only "eight dollars per negro?" Let us see: According to his own showing, the cost, for meat and meal a-

lone, at the lowest prices, will be \$8 a head. Now, the eight weeks which he admits it will take to reach their Eldorado, is worth twenty dollars a hand, as negroes hire at 12 to \$15 a month; but will it not consume at least 3 months in preparations and travelling, together? and ought not the value of time to be estimated in the bill of expenses? Then, add \$36 a head for lost time of laborers, say one half the gang, which reduces the average to \$18—add \$2 per head for contingencies and casualties, and we have \$28 "per negro the trip," minus the "half dime occasionally, at a bridge or ferry," the wear and tear, and the various little extra fixings for the road, that will be valueless at the end of the journey. This makes the cost only \$2 per negro less than our estimate, in your December number, which Mr. Planter attempts so adroitly to discredit, and will be found to be not far from the reality, let who will try it. We commend to his consideration the old proverbs, "two removals are equal to one fire," and "a rolling stone never gathers moss."

4. He makes a futile appeal to the failure of Sir Walter Raleigh in the ancient colony of Carolina, when it was under the almost undisputed dominion of savage beasts and still more savage Indians. The intimation that disease was a prime cause of his failure, and that, *a priori*, the State is sickly, is the sheerest gammon. Has this flaming advocate of emigration never heard of the proverbial salubrity of much the largest portion of North Carolina? Has he not seen the late census report, which shows that she is the healthiest State in the Union and in the world? Let him inform himself on this subject, before he again attempts to disparage our noble old State.

The communication of "Little Planter" is interlarded and sparkles with little quips and quirks which only serve to give it *gout*; and as they all lose their lustre, like *faux feu*, before the light, they may go for what they are worth; and I dismiss them with the

single remark, that I adhere to my estimate of our superior advantages, and affirm in the sentiment of the lamented Gaston, that they are possessed nowhere else in the same perfection, "this side of Heaven."

Mr. Editor: If you can decipher the foregoing hieroglyphics, sketched in haste on my knee, which I have no time to transcribe, you will oblige me by the publication of the same in your next number.

Yours truly. **LITTLE FARMER.**

Potato Diggins, March, 1857.

For the Arator.

The communication of "Little Planter," in the February number of the Arator, calls for a passing notice from this section of the State. He takes "Little Farmer," of "Potato Diggins," to task for advising North Carolinians to stick to their native hearth, and runs off into an eulogy of new countries in general, and Arkansas in particular.

We have heard enough of new countries, and seen numbers who have been South and West and seen the "Elephant," and returned better satisfied than ever with the "good old North State;" and it comes with rather bad grace from "Little Planter," at this time of day, to tell of the wonderful production, advantages, &c., of the virgin soil of his region. You have no doubt, Mr. Editor, heard of the adage—"a man that won't prize his own country," and I have reason to suspect "Little Planter" was going it on that maxim, and to some extent, therefore, is excusable. He seems to have no adequate conception of what a few years improvement, in this fastage, can bring about. He is thinking and writing about North Carolina as she was twenty years ago, and not as she is in the year of our Lord 1857. "There are many things in heaven and earth that are not dreamt of in his philosophy;" and if he could see what can be seen, and what we would take pleasure in showing him, if he will visit our country, we incline to the opinion he might be induced to pull up his stakes and make a re-

trograde movement, as others have done much to their profit and more to their comfort and enjoyment in life.

"Little Farmer" deserves the thanks of the State for his vindication of our good old mother. We join him in telling the rising generation to stand by their homesteads. There is room and verge enough for all the enterprising and industrious. We have a medium climate; a generous soil, which has been sadly abused, 'tis true, by our ancestors, but under a different system of cultivation is fast regaining its pristine fertility; a hardy and honest population; together with school and church facilities, that render a residence in North Carolina second to none in the thirty-one States.

And here let me remind "Little Planter" of a fact which has escaped his attention, when he states that Sir Walter Raleigh, from "disease and other causes," abandoned the State, that the census statistics will show him that *North Carolina and Virginia are the healthiest States in the Union.*

Look into our geological survey, (several reports of which have been published,) and see if you can discover nothing there, which goes to make up a great State. Why, sir, you are decidedly behind the times. If our State ever deserved the opprobrious epithet of Rip Van Winkle, it no longer belongs to her. We of the olden States are building up our soil, while you of the South and West are trying to see how fast you can mow yours down. A few years more, and we will pass you in the race.

We hereby invite "Little Planter" to revisit North Carolina, that he may see that some things can be done as well as others.

EDGECOMB.

For the Arator.

THE SCRATCHES.—I see it stated that to cure the scratches in horses, one or two applications as follows will answer: Wash the legs with warm soap suds, and then with beef brine. I have never known a better remedy than copers, in little bags, tied round the legs.

C.

For the Arator.

Mr. Editor: I have observed for many years, the fact, that when we have very cold winters, with much snow and little rain, that epidemic sore throats prevail more than at other times. Why is this so? and how may the disease be prevented? Will some of your medical readers explain the cause and give the information we country people, particularly, need on the subject? Q.

For the Arator.

Some of my neighbors, dear Arator, renowned for self-reliance, short crops, and poor horses, scout the idea of fall and winter plowing, and still pursue the old practice of letting their land lie *en friche* until the time of singing of birds rolls round; when they lazily hitch up their old plows and rested "creters" to list, by running three shallow furrows together, for corn and cotton, putting off the breaking of the "baulks" until the work of planting is finished.

This system may answer in very light sandy soil; but where the land is inclined to be close and stiff, it is absolutely barbarous. Under it, the land can never be properly broken and brought into fine tilth. The result is, every thing is burnt up by drouth, even the land itself, which is worn out in wretched abortions, without even once yielding a remunerative crop.

It is a pity such men cannot see the folly of their course, and adopt the better plan of breaking by times, and of breaking well their land. It should be broken up in ridges, in time to take the benefit of the pulverizing frosts and freezes of winter; and in the spring, it should be again closely plowed just before planting, which is equal to half the cultivation.

Put in corn or cotton, after this preparation, and subsequently manage it judiciously, and if it don't yield a third more than under the too common slovenly mode of cultivation, the deficiency may be charged to your humble servant,

TAR RIVER.

Have the hill for corn fine and deep.

For the Arator.

As the cotton crop is soon to be pitched, I will venture to offer a suggestion or two in regard to it, for the consideration of planters. In the first place, the ground with us, for the bed, should be broke deep. In the very rich lands of the South, it is an object to prevent too much wood in the plant, which is there inclined to grow too luxuriantly; hence the owners of such lands are adopting the plan of bedding on a narrow streak of undisturbed land, which is to lie immediately under the plant, and check the tap root, the specific office of which is to furnish nutriment to the woody parts of the weed. Our business is to encourage, not prevent its growth, provided we give sufficient strength to our soil generally to contribute to the nourishment of the side rootlets, the peculiar functions of which are to support the fruit. This must be done by broadcast manuring—thickly or thinly, according to ability, but a general sprinkle of it any how.

After the land is bedded for rows 3 to 3½ feet apart, open a deep furrow and put in the manure for the drill; cover it by throwing a furrow each side; then open the ridge exactly over the manure, very shallow with a plow fixed to throw the dirt each way—in the absence of a better, a cutter, with two small mould-boards, will answer. Plant so as to disturb the manure but little, and cover shallow with the common implement for that purpose. This will leave the soil in fine tilth, and the young plant will take a vigorous start, shank well, and soon be out of danger.

To quicken its early growth, which is important for several reasons, make a mixture of red clay and pure cow dung into a loblolly or liquid state, with which wet the sand and ashes (in equal quantities) in which the seed are rolled. After rolling, let the seed lie in bulk until they begin to get warm; then plant as above, and they will be up before the ground becomes crusty, and delight you by the green and healthy appearance of your infant crop.

Take time to do every thing well.

Success, always in the long run, and generally in the short run, depends upon this. Don't aspire to plant too much, an error universally prevalent among us. Five or six acres, well manured, and thus managed, will yield more than eighteen or twenty, poor, unmanured, and badly tilled; and, heavens! what a vast amount of wornout land, labor, wear, tear and scratching will be saved!

I have said nothing of the distance to be given in the drill. That must be determined by the strength of the soil. In some, twelve to 18 inches; in other qualities, 20 to 36 inches space, one stalk in a hill, will be required. I am an advocate of heavy manuring, and hill culture, where the fertility of the soil will justify it.

The mode of cultivation, by your leave, will be discussed in the April number of the *Arator*.

AGRICOLA.

VARIETIES OF PEAS AND PEA CULTURE.

MESSRS. EDITORS—In answer to your correspondent's inquiry in reference to peas, I would say that the earliest kind known in this vicinity is the Strawberry or Early Dwarf pea. They are good bearers, and planted in open beds, often come to maturity by the middle of June. His 2nd inquiry I cannot answer. 3. We have a kind called the June pea, something larger than the common field pea, that I sowed last year along side of the common field pea at the same time—they were sown on the 12th, 13th and 14th of June, on greensward that had been sown to wheat on the 10th of May, and the wheat was eaten up by the white-headed and common gray grub) and the June pea was ripe, harvested and threshed the last of August; while we had to wait some six or eight days after they were taken to market, before the others were sufficiently ripened to commence harvesting. They having been sown in patches as the worms first destroyed the wheat, it was impossible to tell how much ground was sown, but there was twenty one bushels and a peck of seed, and I harvested and sold two hundred and seventy-one bushels. The common field pea gave decidedly the most straw, but near as we could judge, the early kind gave the most peas.

DANIEL PARKER.

POINTS OF A GOOD HORSE.

The New-York Spirit of the Times gives the following directions for examining the condition of a horse:

In purchasing a good horse, sight, wind, feet and limbs must be the uppermost objects of inquiry; for nine horses out of ten are defective in one of these particulars. First, then, examine his eyes, and do this before he comes out of the stable; see that they are perfectly clear and transparent, and that the pupils or apples of the eye are exactly alike in size and color. Next examine his pipes; if good and sound on being nipped in the gullet, he will utter a sound like that from a bellows; but if his lungs are touched, and he is broken winded, he will give vent to a dry, husky short cough; look to his limbs also, and in passing your hand down his legs, if you find any unnatural protuberance, or puffiness, or if feeling first one leg then the other, you discover any difference between them, disease more or less is present; he may not be lame, but he is not clean upon his legs. If he is broad and full between the eyes, he may be depended on as a horse of good sense, and capable of being trained to almost anything. If you want a gentle horse, get one with more or less white upon him; many suppose that the part-colored horses belonging to circuses, show, &c., are selected for their oddity; but it is on account of their docility and gentleness; in fact, the more kindly you treat horses, the better you will be treated by them in return.

The Boston *Traveller* mentions that the Hog Distemper has recently commenced its ravages in that vicinity. It is stated that in some cases the swine are well at night, eating their food as usual, but are found dead in their pens in the morning. As yet the mortality is noticeable more for its singularity and suddenness, than for its extent.

MANURING GRASS LANDS IN AUTUMN.

In one of your late numbers, I noticed an inquiry of a young farmer in regard to manuring grass lands in autumn. In October, '54, I hauled manure on an old meadow that had run out, and had little on it but June grass. A part of the manure was spread, and the balance was left till the January thaw. Where the manure was spread in the fall, the grass sprung up and continued green till the snow fell. In the spring there was a marked difference between that and the rest of the meadow; and when grass was cut, that part yielded double the amount of hay of any of the

rest of the meadow, and in the fall it came up thick with clover, and yielded a good crop of seed.—Where the manure was spread in the Winter and Spring, it produced very little benefit. Since that time we have manured grass lands in the fall, winter and spring, and have uniformly found about the same result. Where manure is spread upon grass lands previous to the fall rains, the beneficial effect is soon visible. but after that I never saw much advantage from top dressing.

Cor. Rural New-Yorker.

MAMMOTH SWEET POTATO—We are indebted to M. Charles Watson for a very large sized and curiously formed sweet potato, raised on his place at Amite City. It is about six feet long, and has the appearance of a number of potatoes attached to each other, being shaped like a vine, and its proportions being alternately large and small. It is decidedly a great vegetable curiosity.

N. O. Delta.

MIGRATION OF PLANTS.

"Plants are seldom motionless. The wind wafts the seed of the dandelion. The waves bear the nut of the cocoa palm. Man has carried the apple and pear, the apricot and the peach, from the highlands of Asia to the Far West. The crepaler have spread over all the world, and have become so cosmopolite that the land of her birth is unknown. Some plants would almost seem to attach themselves to particular races. The common plantain is called by the North American Indians the White Man's Footstep.' Currents of air carry seeds and the eggs of insects and infusoria. To settle this formerly disputed question, a German philosopher, Unger placed several plates of glass, carefully cleaned, between the almost air-tight double sashes with which he protected his study against the rigors of a fierce northern climate.—Six months later he took them out and examined the dust that had fallen on them, through imperceptible cracks and crevices, with a microscope. The result was that he discovered in the apparently inorganic dust the pollen of eight distinct plants, the seeds of eleven varieties of fungus, the eggs of four higher infusoria, and living individuals of at least one genus."

Observations like this, remarks the Scientific American, go far to disprove the evidences of new created life, which are often discovered both in natural and artificial compositions. It seems sometimes almost impossible to imagine how eggs or seeds could have either found admittance or re-

tained vitality under circumstances where life appears, and it has not been deemed inconsistent with revelation to suppose the work of creation still going on. But such instances as above recorded induce a great reluctance to believe in newly originated life, and to induce a belief that the varieties of animals and plants which appear at intervals are but modifications generated from pre-existing species.

INSTRUCTIONS FOR SAVING GARDEN SEEDS.

When the seeds are ripe, gather them without unnecessary delay; otherwise, the pods will split open, and their contents be scattered upon the ground. Do not gather indiscriminately, but take only the finest-looking heads. By this selection of the best plants, and the best seed, good varieties may be even improved, and they certainly will not deteriorate. In this way many of our choice vegetables have been obtained. The practical stockbreeder's motto is, that "like produces like," and he breeds from those animals only which possess the points he wishes perpetuated. Thus, if you select the earliest peas from the earliest vines, for a number of seasons, you can obtain a variety ripening several days earlier than that which you commenced. It has been done once, and may be done again.

Place the seed vessels, as soon as gathered, upon a cloth in the shade, so that they may become perfectly dry, at which time thresh out the seed, by means of a small stick. Winnow out the chaff and small or defective seed, and put the remainder in drawers or small paper bags. Every kind should be labelled with its name, and the year when raised—in this manner, "*Early Salmon Radish*, 1856." This will prevent all possibility of the inexperienced cultivator mistaking beet for cabbage seed, or sowing that which by the lapse of time has lost its powers of germination. Keep these drawers or bags in a cool, dry apartment, where no injury may be apprehended from moisture or the attacks of mice. With care seeds may be preserved for several years, according to the annexed table.

The vitality of seeds, under favorable circumstances, may be depended upon for the following periods:

Parsnips, Rhubarb, and other thin sealy seeds for one year.

Balm, Basil, Beans, Cadroon, Carrot, Cress, Indian Cress, Lavender, Leak, Okra, Onion, Peas, Pepper, Rampion, Sage, Salsify, Savory, Scorzone

ra, Thyme, Tomatto, Wormwood, and small herbs generally, for two years.

Artichoke, Asparagus, Corn Salad, Egg Plant, Endive, Indian Corn, Lettuce, Marigold, Marjorim, Mustard, Parsley, Rosemary, Rue, Skerritt, Spinach, and Tansey, for three years.

Borage, Borecole, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Radish, Sea Kale, Tarragon and Turnip, for four years.

Beet, Burnet, Celery, Chervil, Cucumber, Dill, Fennel, Hyssop, Mellon, Pumbkin, Sorrel and Squash, from five to eight or ten years.—*Schenck's Gardener's Text Book.*

LANGSTROTH ON THE BEE.

The Rev. L. L. LANGSTROTH, of Philadelphia, has devoted many years to the observation of the habits and nature of bees, and has discovered several interesting particulars regarding them. We make a few extracts from an article by this gentleman, in the Journal of the United States Agricultural Society. He has invented a hive so that the top can be lifted off at pleasure, and as much of the honey or comb removed as desired, it being attached to movable bars or slides. "Many persons," says he, "have been unable to control their expressions of wonder and astonishment on seeing me open hive after hive, removing the combs covered with bees, and shaking them off in front of the hives, exhibiting the queen, transferring the bees to another hive, and in short, dealing with them as if they were so many flies. I have sometimes been asked if the bees had not been subjected to a long course of instruction to prepare them for public exhibition; when in some cases the very hives which I was opening, contained swarms which had been brought only the day before to my establishment." The principles which Mr. L. proceeds upon, he thus lays down:

1. A honey bee never ventures an attack, nor acts on the offensive, when it is gorged with honey. This is seen in the case of hiving a new swarm. When the bees are intending to swarm, they fill their honey bags to the utmost capacity, and thus have materials ready for commencing a new hive; but at the same time they are then in the most peaceable mood that can well be imagined, and, unless they are abused, allow themselves to be treated with great familiarity. In such swarms, however, there are generally some hungry ones, which, like hungry men, vent their spite on all that approach them.

2. Bees cannot, under any circumstances, resist the temptation to fill themselves with liquid sweets.

If then we can contrive a way to call their attention to a treat of running sweets, when we wish to perform any operation which might provoke them we may be sure they will accept it, and allow us without molestation to do what we please. I always keep a small watering-pot or sprinkler in my apiary, and whenever I wish to operate on a hive, as soon as the cover is taken off, I sprinkle them gently with water sweetened with sugar. They help themselves with the greatest eagerness, and in a few moments are in a perfectly manageable state. The truth is, that bees managed on this plan are always glad to see visitors, and you cannot look in upon them too often, for they expect at every call to receive a sugar treat by way of a peace offering. Those who are timid, may at first use a "bee dress," though they will soon discard every thing of the kind, unless they are those to whom the bees have an especial aversion. Such unfortunates are sure to be stung whenever they show themselves in the vicinity of a bee-hive and they will do well to give the bees a very wide berth.

Apiarians have for many years employed tobacco smoke for subduing their bees. It deprives them at once of all disposition to sting, but it ought never to be used for such a purpose. If the hives will not permit the bees to be sprinkled with sugar, water, the smoke of burning paper or rags will answer every purpose, and the bees will not be likely to resent it; whereas, when they recover from the effects of tobacco, they not unfrequently remember and in no gentle way, the operator who administered the nauseous dose. Let all your motions about your hives be gentle and slow; accustom your bees to your presence; never crush or injure them in any operation; acquaint yourself fully with the principles of management,—and you will find that you have little more reason to dread the sting of a bee, than the horns of your favorite cow, or the heels of your favorite horse.

We recommend a perusal of this essay to any one interested in bee-culture, as it contains a great deal of novel and most interesting information.—*Prairie Farmer.*

We recommend Calverts' Common Sense Bee Palace.

RELIEVING CHOKED CATTLE.

Pour into the throat of the animal, from a junk bottle, a pint or so of lamp or sweet oil, at the same time rubbing the throat, briskly with the hand, Immediate relief will follow.—*Ex.*

To prevent smut, roll seed wheat in ashes.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., MARCH, 1857.

Our Exchanges will oblige us, in any notice they may take of this number, to state that the Arator, type and press, are offered for sale. Tho' the subscription is small, it is sufficient to form a basis on which an active and enterprising conductor (by establishing agencies, and making personal efforts to procure subscribers) might soon build up an extensive and profitable patronage.

It will be seen by reference to his advertisement, that the Editor of the Arator offers for rent the balance of the year, on moderate terms, a large and comfortable dwelling house and lot; and, also, for sale two of the most desirable dwelling houses and lots, in or near the City of Raleigh; together with a good tract of land of 204 acres, four miles south-east from the City.

This number has been delayed by domestic affliction.

The attention of the reader is directed to the Report on Prof. Mape's farm, in another part of this number. It will well repay an attentive perusal; and it is, indeed, of itself, worth more than a year's subscription to the practicing reader. We present, also, a number of spirited communications, on important subjects, which will interest the North Carolina reader.

The Union and Eastern Journal, published "away down East in Maine," gives the following:

"Sweet potatoes have been successfully cultiva-

ted in Massachusetts. Caleb Bates, of Kingston, Mass., raised several thousand bushels last season. He generally procures seed from the South, because it keeps better there, and plants it in hot beds and draws the slips. Sweet potatoes are no longer a monopoly of South Carolina—the Yankees are trespassing upon her State rights."

This regular downeaster is "as much mistaken as if he had burnt his shirt." He may be cunning enough to make "wooden nutmegs," and such like Yankee notions, but is too ignorant to come it over the "State rights" of South Carolina. Just hear him: "Sweet potatoes are no longer a monopoly of South Carolina." Surely he has never read his school books, never travelled from home, and never conversed with his neighbors, or he would have learned that there are other Southern States, North Carolina included, where sweet potatoes are raised extensively. He and his coadjutors can never, with Sorgho Sucre, sweet potatoes, sugar pumpkins and red onions all combined, render themselves "independent of slave labor." The idea is preposterous as it is fanatical; and they "need lay no such flattering unction to their souls."

March has been quite cold, and it is feared the fruit has been pretty well used up in the bud. The month closes dry and frosty—unbroken land generally too crusty to plow.

For the Arator.

Henderson, N. C., March 21, '57.

Mr. Editor: At a regular meeting of the Granville County Agricultural Society, held this day, the following gentlemen were appointed the Executive Committee of the said Society, for the current year:

Dr. A. C. Harris, Chairman;
S. S. Royster, Thomas J. Blacknall,
Dr. Willis Lewis, A. L. Steed, W. A. Eaton, Col. R. P. Taylor, Dr. G. W. Blacknall, H. T. Watkins, C. B. Cham-

pion, Joseph H. Gooch, R. A. Hamilton, W. H. Hughes, Willis F. Rowland, Col. P. E. A. Jones, A. H. Alley, Jas. A. Cheatham, Dr. R. C. Pritchard, John W. Hays, and Joseph S. Jones.

JOHN BULLOCK, President.

W. H. ROWLAND, Sec.

Raleigh papers and Warrenton News please copy.

PROFITABLE FARMING.

The Clarksville Tobacco Plant says: "Capt. A. Slade, of Caswell, North Carolina, and his two brothers, have sold their entire crops of Tobacco, lugs included, to a Lynchburg manufacturer, for the extraordinary price of \$35 per hundred lbs.—Capt. Slade estimates his crop at 18,000 or 20,000 lbs. It is the product of the labor of some ten hands, If it should turn out to be 20,000 lbs. he will realize from each laborer the unprecedented sum of \$700. Can the cotton fields of Louisiana, the sugar plantations of Cuba, the rice fields or the turpentine districts of the Carolinas, boast of larger profits?

The Tobacco which commands these prices is of a very fine texture, but its chief claim to superior excellence is attributable to the mode of curing. Of this mode we can give the public no more satisfactory exposition than that charcoal is the fuel used."

GREEN FLY.

It has often struck me that your readers might do good service to each other if they would, from time to time, record in your paper the various successes of disappointments which they meet with. For instance no amount of smoke has ever satisfactorily got rid of the green fly in my houses. Frequent fumigation kept my geraniums, &c., tolerably clean, but the pest still existed. This year I have immersed all my plants in a mixture of—tobacco, one fourth pound; soft soap, one pound; water, five gallons; and, although it is now more than four months since they were dipped, I have searched in vain for a single green fly when cutting them down.—IOTA, in *Horticulturists*.

From the Southern Cultivator.
BOYS.

EDITORS SOUTHERN CULTIVATOR—May I not hold up to your youthful readers some of the characteristics of a farmer, with whom I am acquainted, who is now in the eighty-first year of his age and urge upon them to imitate him. He was ever an early riser in the morning. The sun rarely

ever caught him in bed. His language to his boys was:

"He that would thrive
Must rise by five."

He was ever temperate in eating and drinking and as a consequence was uniformly cheerful.—Often his family awoke by the soothing sound of his cheerful morning song.

He always kept his "farm enclosed with a good fence," which saved him from being annoyed by stock breaking into his fields. O, the vexation and loss which some men are subjected to by keeping bad fences, and unhappily, sometimes their neighbors have to share with them.

This aged farmer ever kept out of debt—he almost made it a rule to "owe no man."

"To Creditor or Bank he'd never to run,

He feared neither Constable, Sheriff or dun."

He raised his own horses, mules and oxen and always superintended breaking them, and on such occasions employed none but gentle means, acting on the principle that "a gentle hand will lead an elephant by a hair." It was remarkable that his animals were always "true pullers."

When driving his horse to the plow, or his team on the road you would *never* hear his voice above a "Mezzo Tone." How different this from many. I know some boys, ah! and men too, who when plowing can be distinctly heard a half mile. Such seem to practice the higher department of dynamics. They strike, "Tort," and from which proceed with a rapid "Crescendo," until their power to produce a sound is exhausted. I often hear "explosive tone." Of course this plan of driving horses is not musical.

Now I would say to young plowmen, be calm, be gentle, but "onward move." The horse you drive is a noble animal; treat him kindly, he can appreciate it and will reciprocate your kindness.

FILIUS.

Rough and Ready Ga., 1856.

GROWING FRUIT FOR MARKET.

In *The Horticulturist* for August we find the first of a series of papers on "Visits to Country Places around New York," from which we select the following account of the fruit-growing operations of our friend Dr. I. M. WARD, of Newark, N. J.:

We first visited Dr. I. M. WARD, near Newark, N. J. The doctor is engaged in the laudable pursuit culture, for the New York market. This he does from a love of the subject, no less than with a view to the benefit of himself and his family

is example is one which we should be glad to see followed by other gentlemen, who by showing that may be done by the employment of capital and intelligence, will be the means of teaching others, and thus a better supply of wholesome fruit will be at the command of our great cities, now but half supplied. The demand appears to be unlimited; in New York, for instance, his agents, the middle men, a class of honest dealers who have risen up since the mode of sending fruit by wholesale, instead of accompanying it, and chaffering for the market value, keep an account of the quantity received from each cultivator, and allow all returns in a most business-like way. Thus one of the most serious difficulties is obviated.—Dr. WARD employs pickers at so much a bushel or quart, and by the hour; he can be mostly at home to superintend these operations; the fruit is forwarded by a regular steamboat, consigned to the middle man, who receives it with in an hour or two as his market engaged for every variety, and the distribution goes on like clock work. You may have Dr. WARD's at breakfast time, and dine at DELMONICO's, on his strawberries, which were begun picked when you started; or be at a private party in the Fifth Avenue, in the evening, enjoy his grapes or pears, which left Newark at four o'clock.

The proprietor enjoys a great advantage of his own; as the fruit ripens by degrees, the first picking of grapes, blackberries or strawberries, being insufficient for market, the family have the earliest for themselves and their friends, and, by the time the period of abundance has arrived, they have probably had sufficient to satisfy all, and can devote the whole remaining crop to sales. Dr. WARD has five acres of strawberries, an acre and a half of raspberries, one acre of grapes two hundred cherry trees planted along his path and roads, in such positions as not to injure the other crops by their shade, one thousand pear trees, standard and dwarf, half an acre or more of currants, and his place is beautified with shade and ornamental trees, forming a *tout ensemble* of plenty and beauty, such as thousands living in cities might envy, and if they would study the subject as the doctor studies it, might reap rich returns from it.

Though this place has been in the tenure of its present owner but ten years, the returns are already early sufficient for the wants of a large family.—The strawberry culture is of recent introduction, and we shall be surprised if the entire returns of the present season do not considerably exceed three thousand dollars, with abundance of all farm

produce for himself. Surrounded by beautiful scenery, fine wood and water, an intelligent home and visiting circle, our friend and correspondent enjoys a life much to his own taste, and confers a useful boon on his fellow men. In winter, the family remove to Philadelphia, where the doctor lectures to a class of medical students, and attends to the education of his family. This is a picture so pleasing to the mind, and so eminently worthy of imitation for its utility, that our host will pardon our holding it up in this way as an example to others. Already his neighborhood is benefited and improved by seeing his success; in a few years this section of New Jersey will be a main prop in supplying the greedy maw of its neighbor, New York, to the advantage of both.

Dr. WARD, after much examination, has adopted the Iowa or Washington Strawberry, as producing a large and valuable crop. BURR's new Pine, he thinks, will prove too soft for a carrying crop, though its flavor is unsurpassed. The Early Scarlet follows Iowa in ripening, and is a good market kind. HOVEY's Seeding he considers an excellent market crop, and that it must always continue to be valuable. Several other kinds are under experimental cultivation. We were so fortunate as to be there at the earliest picking, when the citizens were paying any price demanded for the first berries of a good size, and from the neighborhood, the Southern ones being discarded as soon as the Jersey crop made its appearance. The pear trees here will yield an average crop, which may be worth a thousand dollars; much more than this sum will, no doubt, be realized per annum, when the standard trees come into bearing. Dr. WARD has himself enlightened our readers on his mode of pear culture, so that we need not enter now on the subject. All the larger cities of the Union, and even very many small ones, offer inducements to cultivators to pursue the system we have faintly indicated. A few years only will elapse before this gentlemanly system will be extensively intimated.

THEORY AND PRACTICE OF HORTICULTURE.*

ACTION OF LEAVES.

"A leaf is an appendage of the stem of a plant, consisting of an expansion of the cellular rind, into which veins are introduced; and enclosed in a

*The Theory and Practice of Horticulture, or an attempt to explain the chief operations of Gardening upon physiological grounds. By John Lindley, P. H. D., F. R. S., &c. London, 1855.

skin through which respiration and perspiration take place. It is in reality a natural contrivance for exposing a large surface to the influence of external agents, by whose assistance the crude sap contained in the stem is altered and rendered suitable to the particular wants of the species, and for returning into the general circulation the fluids in their matured condition. In a word, the leaf of a plant is its lungs and stomach, traversed by a system of veins."

"The functions of respiration, perspiration and digestion, which are the particular offices of leaves, are essential to the health of a plant; its healthfulness being in proportion to the degree in which these functions are duly performed. Consequently, whatever tends to impede the free action of leaves, tends also to diminish the healthiness of a plant." pp. 58 and 59.

Let us bear this in mind, that leaves are the lungs and stomach of the plant, and that without their healthy action, there can be no vigour of growth, and we shall have frequent occasion to apply this knowledge in our practice.

Is any one afflicted with weak lungs? Let him sympathize with the plant when he sees the tender leaves struggling against the dusty atmosphere of a city in their pot-house prisons, or breathing the vitiated air of unventilated rooms, or gorged with superfluous moisture. Is any one a dyspeptic?—Let him remember how necessary it is to good feeling and sound healthy action, that his stomach should be in good condition, and be supplied with wholesome food.

We must learn to consider the plant what it really is—a living being, and not a stick which needs no further care. Plants are wisely endowed by their CREATOR with wonderful constitutions for withstanding the vicissitudes of soils and seasons, for adapting themselves to those various conditions which the chances of life may dispense to their lot but they nevertheless are fond of good living and will repay with interest all the kindness and attention bestowed upon them by the careful and humane husbandman.

The leaves of a plant mark upon its stem the nodes or joints, and in the axil of each leaf a bud is formed, which is capable of growing and extending into a branch. This is the normal state, and exists almost without exception in all plants. But nature, though working by general laws, abounds with exceptions and it is often by means of these, that our attention is arrested, and we are aided in distinguishing the true office and functions of the several parts. The typical state of a plant is with

root in the ground and leaves above—the root absorb and supply the stem with sap from below, the leaves to elaborate and digest it, fitting it for nourishing the plant, forming new wood, perfecting fruit, &c. But we have numerous exceptions.—We have plants without roots, plants without leaves and plants without stems. Whenever the leaves are absent, the green coloring matter which is the general characteristic of vegetation, is also absent; unless, as in some cases, the thick succulent stem performs the office of leaves as in the cactus family.

The *Monotropa* or Indian pipe, which grows up in clusters in the woods in autumn, is destitute of leaves, having only a few scales around the stem. It is pure white and is often mistaken for a fungus. The *Tillandsia* owes its name of "long moss" to its lichen gray color, being destitute of true leaves. The *Cuscuta* (Dodder or Love Vine) is a bright orange yellow. The seeds germinate in the earth and the radicle or primitive root lives long enough to form a slender twining stem. As soon as it reaches the surrounding herbage, it gives out aerial roots which penetrate the bark of the supporting plant and feeds upon its juices. The original root then perishes, and the plant has no longer any connection with the soil. Being nourished by the elaborated juices of another plant, it requires no proper digestive organs of its own, and consequently does not produce leaves. The Mistletoe also penetrates by its roots into the *alburnum* or *sapwood* of the trunk or branch upon which it falls, and receiving from it as from the soil the ascending sap in its crude state, it needs a system of green leaves to digest and prepare it for the purposes of nutrition.

The *stoments* or breathing pores of the leaf are generally on the under side (except in the case of floating aquatics, where for obvious reasons the arrangement is reversed.) They vary in size and number in different species of plants, adapting them for dry or humid climates. Perspiration and evaporation by the leaf, go on in warm and bright sunny days with great power. Dr. LINDLEY relates HALES' experiment with a sunflower which gave the following result:

"After 15 days, viz, from July 3d to August 8th he found, when making all necessary allowances for waste that this sun-flower plant, three feet and a half high, with surface of 5616 inches above the ground, had perspired as follows:

In 12 hours of a very warm, dry day, 30 ounces averdupois.

On another day, 20 ounces averdupois.

In a dry, warm night, without dew, 3 ounces average.

In a night with some small dew, 0 ounces average.

and that when the dew was copious, or there was rain during the night, the plant and pot were increased in weight two or three ounces."

In our warmer climate here, the above figures would have to be increased.

It is from this excessive evaporation by the leaves that it is so difficult to transplant successfully growing plants in the summer, or in other words during the flow of the sap. In transplanting, the roots are more or less mutilated, and even if taken out carefully and entire, as may be done with small plants, their action is arrested; and, before communication between them and the soil can be re-established, is apt to perish [for want of moisture to supply the evaporation. Hence the propriety of stripping off the leaves partially to ensure safety when transplanting is to be resorted to in the growing season. In inoculating or budding of fruit trees, it is always advisable to trim off the leaves, only leaving the short leaf stalk, and thus cut off that demand upon the bud which the full leaf would make.

Under the influence of solar light, "the leaf gives off oxygen by decomposing carbonic acid; whereupon remains behind in the interior of the leaf in a solid state."

"It is to the action of leaves; to the decomposition of their carbonic acid, and of their water; to the separation of the aqueous particles of the sap from the solid parts that were dissolved in it; to the deposition thus effected of various earths and other substances, either introduced into plants, as silica and metallic salts, or formed there, as the vegetable alkaloids; to the extraction of nitrogen; and probably to other causes as yet unknown; that the formation of the peculiar secretions of whatever kind, is owing.

"And this is brought about principally, if not exclusively by the agency of light. Their green color becomes intense, in proportion to their exposure to light within certain limits, and feeble, in proportion to their removal from it, till in total and continued darkness, they are entirely destitute of green secretion, and become blanched and etiolated. The same result attends all their other secretions; timber, gum, sugar acids, starch, oil, resins, odors, flavors, and all the numberless narcotic acid, aromatic pungent, astringent, and other principles derived from the vegetable king-

dom are equally influenced, as to quantity and quality, by the amount of light to which the plants producing them have been exposed."

Thus we see the vast importance of the great chemical laboratory of Nature, the foliage of vegetation—in the grandeur of silence speaking forth mighty things—never exhausted, never blundering like mere human contrivances, but with highest skill and subtlety of refinement, ever attesting the consummate ability of that GREAT ARCHITECT, under whose supervision all its manifold operations are conducted.—*S. C. Agriculturist.*

TO SUBSCRIBERS.

The present number completes the Second volume of the Arator. Subscribers who have not paid, are requested to remit their dues by mail.

BOOK NOTICES.

We are indebted to the politeness of B. P. Johnson, Esq. Secretary of the New York State Agricultural Society, for a neatly bound volume of some 300 pages, brought out through the agency of said Society, at State expense, entitled "First and Second Report on the Noxious, Beneficial and other INSECTS of the State of New York, made to the State Agricultural Society, pursuant to an appropriation for this purpose from the Legislature of the State—By Asa Fitch, M. D., Entomologist of the State Agricultural Society," &c. It is a work of interest and value to the husbandman every where—and is one of the useful fruits of Agricultural Associations.

We are also indebted to Mr. Johnson for a beautifully printed work of 90 pages, entitled "Dedication of the New York State Agricultural Rooms, Albany, February 12, 1857." From the brief history of the Society, by the able Secretary, (Mr. Johnson), it appears the institution was organized in 1832, twenty-five years ago; since which—a most melancholy evidence of the transitory nature of our earthly existence—nearly all of its founders and every soul of the original Officers have passed away. It had to struggle for several years for existence—held one Fair, but was unable to continue the Fairs for the want of funds. In 1841, an act was passed for the encouragement of agriculture, appropriating eight thousand dollars annually, to be divided among the agricultural societies, which has been continued to the present time. The Fairs were revived the same year, and have ever since been regularly continued, increasing in interest, utility and importance every year. The Society now has a splendid building and rooms for its purposes; has a large Library containing thousands of volumes; a Museum containing various farm implements, seeds, and miscellaneous articles; and, in a most flourishing condition, is steadily pursuing the objects of its mission and accomplishing incalculable good.

We have received a pamphlet, on the treatment of Consumption by "Allopathy, Homœopathy,

Water Cure, and Medicated Inhalation," &c. by Robert Hunter, M. D. New York. This treats of an important subject; but we are not prepared to express an opinion on its merits. "When doctors disagree," etc.

We have been politely favored by Mr. Pomeroy, an extensive and accommodating bookseller, of this city, with a new agricultural work, called "The COTTON PLANTER'S MANUAL, being a compilation of facts from the best authorities on the culture of Cotton; its natural history, chemical analysis, trade and consumption; and embracing a history of Cotton and the Cotton Gin. By J. A. Turner." Price one dollar. The work contains a great amount of information interesting and valuable to the cotton planter, and he could not better spend his money and time, than in the purchase and perusal of it.

We are also under obligations to Mr. Pomeroy for an essay on "The CHINESE SUGAR CANE AND SUGAR MAKING. By Charles F. Stanbury, A. M.

late Commissioner at the Industrial Exhibition, London." Price 25 cents. The present state of the public mind in regard to this new article of culture creates a demand for such a work, and it will no doubt, as it should, be eagerly sought and read by all who are interesting themselves in the introduction and cultivation of the Chinese Sugar Cane.

Both these works, together with many others of value and interest to the agriculturist, may be procured at the Bookstore of Mr. Pomeroy.

In our notices, last month, of improvements in our Exchanges, we inadvertently omitted to say, that the Lexington Flag has been amalgamated with the Greensborough Patriot, under the title of PATRIOT AND FLAG, at Greensboro; and that is now one of our neatest and ablest exchanges.

The Fayetteville ARGUS, which has always been conducted with marked ability, has recently been re-enforced by the accession of a talented assistant Editor. Pecuniary success to both.

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever introduced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other.—The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

FORT SMITH, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vines and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

TO ROBERT H. DOUGLASS, Esq.

Dr. Goree, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supercede the use of every other," and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw "that pea-vine," and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.

B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says: "If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 1½ acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail.—They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

* * * Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount of their orders are forwarded immediately.

Feb. 57.—3m's

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALER IN
Drugs, Medicines and Chemicals.

DYE-WOODS, & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,
Trusses and Supporters of all kinds.

Spices, Snuffs, Manufactured Tobacco,

All the Patent or Proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manu-
facturing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

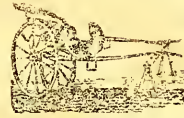
FARMER'S HALL, RALEIGH, N. C.

The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as **JENKINS' OLD STAND**, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows.
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY, PUBLISHER.

BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including Records for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.

The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemie Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the rail road Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good

and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers that he has obtained from John Kirkpatrick, Esq. of this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, that planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 1½ feet, at one dollar per package. If sent by mail, thirty cents must be added to pay postage.

SAM'L J. HINSDALE,

Fayetteville, N. C.

Jan'y 15, 1857.

12 2t

PAYMENTS FOR THE ARATOR SINCE FEB. NO.

Rippon Ward 3 dollars, Samuel Norris 2, Granville Agricultural Society 10, John S Daney 3, and the following 1 dollar each: J W Brower, John B Johns, J R Siler, Alsey Hunter, A L Erwin, Allen Waller, W M Cannaday, Col. D Bethune, Col. S P Horton, Z Z Falls, James Faulk, S Bagley, Jesse Jackson, Seth Woodall, H Craft, D Shaw, A O Grady, George Patterson, Dr. P A Sifford, Charles H Alexander.

INDEX TO MARCH NUMBER.

Jeffreys on Sub-soil Plowing, 705; Report on Prof. Mapes' Farm, 707; New Articles of Culture, 710; Replies to Little Planter, 710, 712; The Scratches, 712; Sore Throats, 713; Fall and Winter Plowing, 713; Cotton Culture, 713; Peas, 714; Points of a good Horse, 714; Hog Distemper and manuring grass Lands, 714; Potatoe, Plants, Garden Seed, 715; The Bee, choked Cattle, Smut in Wheat, 716; Editorial Notices, 717, 721; Ex. Com. of Granville Ag. Soc. 717; Profitable Farming, Boys, Growing Fruit, 718; Horticulture, 719.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.
VOL. III. RALEIGH, APRIL, 1857. NO. I

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, Editor & Proprietor.
TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, invariably in advance.
Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more, at the same rates.

For the Arator.
Mr. Editor: The Southern Planter for April gives a very interesting synopsis of a the conversation of several intelligent farmers, at a late informal meeting of the Executive Committee of the Virginia State Agricultural Society, held in the city of Richmond, which elicited some valuable information, furnishing matter for profitable reflection to the agriculturists of North-Carolina, as well as presenting an example worthy of imitation both in their social meetings (which are too few and far between) and methods of farming (which are altogether too reckless and unsystematic.) I would, therefore, respectfully call their attention to important statements made by some of the gentlemen present, as reported by the Planter—premising that, altho' contradictory in some particulars, they are such as serve to evolve useful and practical truths.

In regard to rotation, grazing and wheat, Mr. Ro. Douthatt, of Charles City County, whose land is a fine clay loam, on James River, stated that he cultivates on the four course rotation system, of clover, wheat, corn, wheat, followed, of course, by clover again. His fields contain 110 acres each. He grazes upon the clover, 40 cattle, 50 sheep and 20 mules. Makes fine crops; and notwithstanding chemists contend land is injured by removing vegetable matter, under his system, which commenced in 1848, he had doubled his crop of wheat in one rotation. On a portion of his land, which formerly blew away with the March winds, he had made, in 1852, 42½ bushels per acre. He limes extensively once in each rotation, but not so heavily as at first. Most farmers on the river repeat the liming periodically. His neighbor Mr. Selden, also grazes as closely as possible, and says he will make no wheat if he doesn't. Mr. Taylor, who took the Society's testimonial, as one of the 12 best farmers in Virginia, is also a close grazer. But he manures every foot of his land in the rotation, making the manure entirely from the resources of the farm, and applies it altogether to

clover. He has never used guano—his neighbors who have, think it lessened their crops of clover and grass; but it may have been owing to the drouth of the last two seasons.

I think, Mr. Editor, you will concur with me, in the opinion, that all this is very well except the close grazing. I know of no lands in North-Carolina that would be benefitted by grazing at all, except, perhaps, by sheep, whose dung is very rich and not so liable to deterioration by exposure on the surface. On the contrary, grazing impoverishes our soil, by taking away more than it restores. It may do good, by trampling and compacting soil, like that of Mr. Douthat, so light and dusty as to be "blown away with the March winds;" but it will not answer, as a system, generally, with us. I am decidedly in favor, however, of providing highly manured grass and clover lots for pasturing milch cows and calves, mares and colts, with moderation—the animals to be regularly penned or stabled every night, for shelter and to save manure. These fields should be so divided, that part may be mowed for hay, and a part grazed. This may be done with advantage every way, without interfering with the general system of cropping.

But to return to our neighbors of the Old Dominion: Mr. Dulany of Loudon thinks it better to cut off clover than to graze it. An experiment proved that land from which the clover had been

cut, yielded 20 per cent. more wheat than that which had been grazed. Mr. Nesbit, an eminent English chemist, thinks it better to cut off two crops than to graze one, because the cattle nipping off the budding leaf, would prevent the development of that much root; whereas in cutting off the full grown stalk and leaf, the root has had time to develop in the land, and so increase the nutriment in the soil. But the farmers in Clarke would not graze their clover. Mr. Harvie, of Amelia, did not graze at all for sixteen years. The land, under that system, was much more productive in corn, oats and to-

bacco; less so in wheat. He now grazes extensively and makes more wheat; but, quere? as he uses guano, may not the increase be attributable to that?

Speaking of Tobacco and Lime above Tidewater, Mr. W. of Pittsylvania, said, as far as lime had been tried in his region, it had no effect whatever. He once scattered eighteen or twenty bushels of slaked lime on an area of 40 feet diameter, which has never produced any visible effect whatever. Mr. Peter Hairston, of North Carolina, said he had tried lime without any visible effect. The lands in his section were naturally good—he knew a field that had borne grain every year since the revolution, without manure, that will now produce from ten to fifteen bushels. They make as fine tobacco as any lands in the world. Three brothers of Caswell County, N. C. had just sold their crops of tobacco in Lynchburg, at 35 to \$35½ per hundred, and the manufacturers said it sold for half its value. It had been grown on thin land, worth now \$25, formerly 10 to 12 dollars per acre. It was mainly manured with guano, 200 lbs to the acre—more made the plant too coarse. The brothers made little other crop, and cultivated 12,000 hills to the hand; at 4000 hills to the acre; and 5 or 6 plants to the pound, the sales would amount to 700 dollars to the hand. This is above the average, but a plenty will sell at 25 dollars per ewt.

The largest crop of tobacco per hand, he had ever known, was 3,500 lbs.

Col. Knight, of Nottoway, said lime is totally valueless on the chocolate and grey lands of his region; but produced a good effect on the pipe-clay land. On these lands, when put in moderate condition, clover grows finely.

A gentleman in Prince Edward cultivated, with 15 hands, 200,000 tobacco hills, 100 acres in wheat, 60 acres in oats, and 50 acres in corn.

Col. Cocke, of Powhatan, raised his plants on land not burned, and found that burning was not necessary, if sites were selected where a thick bed of leaves

has kept the grass from growing, and guano be applied at the rates of 1000 lbs per acre. The plants should thus be sown rather late. Several other gentlemen had raised plants very successfully in the same way. Mr. Witcher had a neighbor who burned his plant bed on a wheat stubble, plowed under, and then covered with corn stalks, which made as good plants as he ever saw grow. One year the suckers of his new ground crop ripened and scattered their seed over the ground, which, after it was plowed, came up, making the entire field a plant bed; he drew his plants from around the stumps, and they produced as good tobacco as he ever saw; showing that the sprouts will make as good seed as any; & it was said sprouts drawn from cabbage stalks and planted will also make good cabbages. The best tobacco was always a little undersized for the quality of the land. Tobacco inspected in Richmond sells better than that inspected in Petersburg, because it bears a higher price in foreign markets.

In regard to Corn with Peas, Mr. Segars, of Southampton, said he had known lands cultivated annually, for ten years, in corn with peas sown among it at the last working; and the land became better and better.

With respect to De Burg's Superphosphate: Several gentlemen had tried it to their cost; having found it totally worthless.

If such conversations among the farmers of North Carolina, were frequently held, reported and published, much valuable practical information now buried in the minds of comparatively few would be brought out for the benefit of the whole reading public; and, my word for it, Mr. Arator, nothing would more thoroughly arouse the spirit of improvement, nor better direct its efforts, than the well authenticated facts thus, in familiar and friendly style, communicated. I am, to such information,

A DEBTOR.

[Our correspondent is right. The valuable abstract and remarks which he

has furnished above, in a very small compass, contain useful information, on the subject of rotation of crops, grazing, the cultivation of clover, wheat, tobacco, corn, peas, and the use of certain fertilizers, which will better serve the inexperienced agriculturists than volumes of untried theories. We do not believe the worth of such information is appreciated; nor can it be justly estimated under the existing supineness of our agriculturists. They do not appear to have observed the fact, that in all other branches of business and departments of human society, social intercourse, intellectual attrition, and minute examination, are the indispensable means of advancement; and remain lamentably ignorant of the fact, that these are as essential in the success of all our rural avocations as any other. If our people were convinced of their importance—if those among them even who are alive to the necessity of improvement—but saw and felt it as they should, every county in the State would have well organized agricultural societies, holding their regular meetings, imparting light and heat to their members, spreading convincing facts among the people, and accelerating every where, in their own farms, the farms of their neighbors, and the farms throughout the State, the peaceful and glorious triumphs of the plow.

Let every one read attentively and seriously consider the matter here laid before our readers.]—ED. ARATOR.

For the Arator.

I consider putting in manure and covering corn well in the drill, require the exercise of considerable skill and care. When the ground has been previously plowed deep and close, I find the following a nice plan: Run off your rows four and a half to five feet apart, opening a deep and wide furrow, in which shovel your manure as bountifully as possible; then list it, turning one furrow on each side upon it; split the ridge shallow, for plantinting, with a small plow, with a mouldboard on each side,

then drop and cover with an implement such as is used to cover cotton—being a board, 2 feet long, nailed in front of a square helve to go in the beam like the helve of a cutter, with the bottom edge of the plank not hollow, but perfectly straight. This immediately follows the dropper, and covers handsomely. A notch in the plank will cause it to cover deeper.

GATHIERER.

For the Arator.

WHEAT AND OATS.

Mr. Editor: Some have a prejudice against oats, because they imagine the crop to be a great exhauster of the soil, dont think much of them, and believe wheat the more profitable. Some like the oat crop, and always sow oats, and follow with wheat on the oat stubble. They make good crops and say their lands are not exhausted by the practice.

The probability is, that most of the crops planted in the spring, are more exhausting than those which grow thro the winter. The winter plant takes deeper root, draws more of its substance from the subsoil, sooner covers the land in the spring, and protects it more from the killing effects of a hot sun upon the naked ground. But no one, for this reason, would think of abandoning all spring crops! Why, then, give up oats? It is certainly excellent food; those who raise the crop, generally have fat horses and never have to buy corn; while those who reject it, are mighty apt to be hard run, to say the least. If it greatly exhausts, that is, perhaps, in consequence of close pasturing and grazing: for no extraordinary exhaustion is observed where grazing is arrested by early turning under the stubble for wheat. By sowing peas immediately after the oats are cut, and turning under the vines to sow the wheat upon, the land would be enriched, and all succeeding crops increased. My opinion is, oats and rye might both be very profitably raised for hogs as well as horses. Let particular fields be seeded for hogs, so divided that the hogs will first take the oats, and then the rye—neither being cut—

thus returning the straw to the land. By the time the rye is exhausted, peas and potatoes will come on; and I have not a doubt pork may be raised in many sections of our State, by pursuing this plan, at much less cost than any other now practiced.

I hope some, aye, many of your readers will give this plan a fair trial. It may bring out favorable and important results.

I am, as a general rule, for diversifying as much as possible, and raising all the valuable products with which God has so bountifully blessed us, that may be needed for domestic consumption and comfort, in connection with that which circumstances may indicate as a leading crop for market.

Very respectfully yours.

TABS CREEK.

Granville Co., April, 1857.

For the Arator.

RAISE SHEEP.

I see that some of the writers for the Arator strongly recommend the raising of sheep in North Carolina. I am also a zealous, though I must confess, a weak, advocate for attention to this agreeable branch of husbandry. I have long been convinced it might be done with great profit and comfort to individuals and with immense increase to the wealth and prosperity of the State, throughout almost every portion of her wide-spread territory. So far as the West is concerned, this was shown conclusively, some years ago, by the Hon. T. L. Clingman; and there is no doubt success would crown the attempt in the middle and some of the eastern portions of the State. What is done elsewhere, can, with equal advantages, certainly be accomplished here. Our advantages of climate and soil—main things—all will admit, are at least as good as those of Vermont. Well, now let us see what they do there. Mr. Comings, of Greensboro', states, in the last March number of the New England Farmer, that three years ago he purchased two ewe sheep of the English Leicester breed, at ten dollars each; and that the total income

from wool, &c. and present value of increase—giving the figures for every intent—amounts to \$137,37; costing nothing, in the raising, but a little hay in winter and grateful attention to the animals. Here is an annual income of nearly one hundred per cent. upon a small investment in an old and welltried pursuit. Look at ye stingy, lazy, hide-bound, one-idea six per cent. financiers; look at it ye ever-on-the-stretch seekers and runners after new things—ye dupes of *moras multicaulis*, *reseue grass*, and *sorghum suere manias*; look at ye simple headed owners of small farms, who think it would be a capital thing for farmers with a little more means to add sheep to their domestic animals, but it would n't benefit you! Look it, I say, and see how easily all farmers, from the greatest to the least, can, by a small investment, proportioned to their circumstances, even down to twenty dollars, add to his stock a source of sure and certain comfort as well as profit.

I do not here, sir, speak of raising sheep as a main business—though that can no doubt be done, in some sections of the State, as successfully as any where in the world—but my object is simply to urge upon our people generally to adopt sheep of good blood as a part of the live stock of their farms; and I do this with the settled conviction of years that it will handsomely repay the little additional outlay, expense and care attending it. They will ultimately come to it; and whoever is foremost in the race will reap the richest reward. As a very good protection from the carnivorous appetites of dogs, the sheep may be kept with the cattle, and it is easy to train them to this. I saw a sheep feeding on the commons, on entering your city recently, when a mischievous urchin, passing, set his dog on it, and I expected soon to see the timid and helpless creature cruelly torn; but it galloped up to a cow a few paces off, and running first one side and then the other, eluded the dog, who was afraid to venture too near the range of the protecting animal's horns. This furnished ocular demonstration of the attach-

ment and protection which cattle will extend to sheep.

I hope those who have experience in this whole matter, in North Carolina, will give it to the public through your paper.

ENOË.

For the Arator.

CULTURE OF COTTON.

Cotton, planted at a propitious time, and well put in, will be up in ten to twelve days. Its subsequent management requires practical skill and diligent attention. When first beginning to come up, it does great good to run a small harrow, 15 to 18 inches wide behind, with teeth on the sides only, so arranged, that they will finely break all the crusty surface, and at the same time not penetrate too deep, nor tear up the plant, immediately over each row. The ends of this harrow teeth should be bent backwards like a crooked elbow, throwing up little flattened arms behind, inclining outwards on each side, which both prevents injury to the roots of the plant and gives the implement greater efficiency in destroying the first buddings of grass and weeds which rise up to choke it. Scotching the enemy thus early, gives a fine chance to keep him in check easily the balance of the season. In a week or ten days after this run something like a scooter plow around the plant, which by that time will begin to show considerable vigor; immediately plow out the middles nicely, following with the hoe hands, whose business will be to chop out at proper distances in the drill (12 to 20 inches will probably suit in the most cases), thinning to two stalks, and drawing a little fine earth around them.

All subsequent plowings are best and quickest done with the sweep, a hoe V shaped, the wings expanding backwards until their ends are two feet apart. It is fixed on a helve like a cutter, and goes in the earth from 1 to 2 inches deep, more effectually cleaning and loosening the surface, and less destroying the expanding roots of the plant, than any implement I have seen in use. The first running of the sweep should

be followed by the hand hoe, the cotton thinned to one stalk in a place, to be left supported by a small quantity of earth drawn around it. The sweep and hoe do the after culture, and should be used as often as necessary to kill grass; loosen the surface and keep it permeable, so that the nutritious and healthful circulation of the atmosphere to the roots may not be obstructed. This process must be continued, from time to time, until the cotton becomes so interlocked as, itself, entirely to suppress all vegetable enemies to its growth.

Let the cotton be topped generally pretty early.

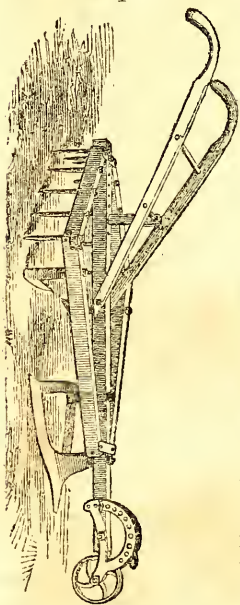
Harvest it when open, and have in market as early as practicable.

Yours.

AGRICOLA.

Our correspondent, "Agricola," has probably never seen the implements represented below in use; nor have we, but we believe they would be found to be useful and, in some instances, more convenient than any others—indeed, the sweep here represented appears to be a decided improvement upon the one described by him.

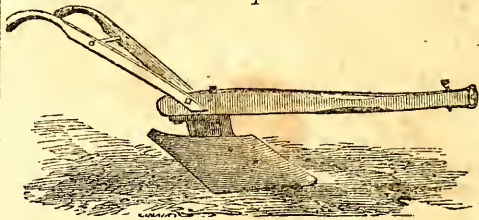
Cotton Sweep. 68.



It is much approv'd where it has been tried. The forward triangular share or sweep works 18 inches wide; the next succeeding teeth are a flat bar of iron the forward edge sharpened and turned inward at the bottom and level with the sweep so as to cut to the point marked by the sweep, thus cutting clean 32 inches more or less deep, when the small pointed harrow teeth follow and pulverize more perfectly. It may readily be expanded or contracted at pleasure.

Ruggles, Nourse, Mason & Co., manufacturers.

Cotton Scraper. 69.



This represents an improved Cotton Scraper, important at the first working. It gives great satisfaction to the planters in the South wherever it has been introduced; is made by the same manufacturers, of either wrought or cast iron, and is strong, durable and very low priced.

We hope some of our planters, who can very well spare a few dollars on implements promising important labor-saving results, will immediately order these, and give them a trial.

[ED. ARATOR.]

For the Arator.

Manuring and Hill-Side Ditching must henceforth be the policy and practice in North Carolina. Manuring to revive and increase the fertility of our soil, and hill-side ditching to preserve it from washing, are necessary to our salvation as an agricultural people. The ditching can be done with little labor and expense, while huge will be its benefits; and as the means of learning how and of applying the labor to do it, are in every man's reach, I shall dismiss this branch of my subject, at present, with the single remark, that he who neglects to do this for his rolling lands, is either as blind as a beetle or as lazy as a hog.

In our compost heaps are our gold mines, richer and more important to us than the mines of California; and we ought therefore to give all diligence to increase them. Let no man say, in his ignorance and indolence, it will not pay—I cannot tax my self with so much useless labor—I cannot make so much manure. The lack of experience, energy and resolution are at the bottom of this language. I am convinced, from experience, that, on every farm, 2,000

bushels of good compost, per annum, can be raised to the hand, at but little cost. And every one can do it in the following manner: Let the horse, cow and hog lots be kept well littered with frequent and bountiful supplies of pine straw, oak leaves, cotton and corn stalks, muck, woods mould, &c. Put up the stock every night in these lots; and three or four times during the year, when wet, after rain, the materials thus trampled and saturated should be raked up clean and put in pits or pens—supplying new materials abundantly every time. The stable manure, cotton seed and green weeds collected after laying by crops, will help to make noble compost heaps in the fields. In this way an astenishing amount of manure may be raised in the course of the year. And this will make black-jack ridges produce equal to some of the “crack” lands of the South. Keep, then, a constant eye to the growth of the manure heaps.

W. C. B.

Franklin, April 10, '57.

MILK COWS AND ESCUTCHEONS.

When Guenon's theory of determining the value of milk cows, by the growth of hair on its thighs, above and adjacent to the bag, was first introduced, the idea was received with a good deal of scepticism. Time has wrought changes. At a late convention by the legislative club of the State of New York, one of the speakers gave the evidence in relation to Guenon's theory:

“M. Guenon, a French writer, has discovered certain indications which he claims to determine the milking qualities of cows. This he calls “escutcheons,” being the hair which grows upward's (contrary to the general rule, on the udder, thighs, and hinder part of the body. It is easy to distinguish the escutcheon by the upward directions of the hair which forms them. I cannot go into detail here upon the system, but worthy of notice, I will allude to the testimony of those who have given attention to it.

Mr. John Haxton, in a work publish-

ed in 1853, entitled “How to choose a good Milk Cow,” in reference to the indication of a good milk cow, p. 178, says, “The writer has examined many hundred of dairy cows in Britain, and the conclusion arrived at in regard to Mr. Guenon's test of judging of the milking properties of a cow, by the development of the *ecussion*, is that in a very large majority of the cases, it is borne out by the facts.” In a London dairy, belonging to Mr. Riggs, 31 Edgware road, where about 400 cows are kept, and where nine-tenths of them are far above average milkers, the *development* or *upward* growth of the hair on the posterior part of the udder, thighs, and perineum, was too remarkable to be accounted for by accidental causes. As well might it be said that all other tests, such as length of head, softness and flexibility of skin and wide quarters, were accidental, and had no reference to the milking properties of a cow. When a phenomenon presents itself over and over again, accompanied in a majority of cases by certain results we may be certain that it is not accidental, but natural; and while we may be unable to account for these results upon satisfactory grounds, it is neither philosophical or prudent, to deny or ignore the connection between the one and the other, and thus to forfeit the advantages which the fact itself is calculated to afford.”

The late Mr. Phinney, of Massachusetts, a very careful and critical observer, made examination of a large number of milk cows, and found in a majority of them that were good milkers, these developments well marked. He conversed with a large number of intelligent gentlemen when he was abroad in 1851, in Great Britain and France, and found but one opinion as to the general character of the animals which possessed these developments. And so far as we have learned the views of gentlemen in this country who have given attention to this subject, the result has been the same.

“I think it may with safety be affirmed that this ‘one principle’ is established

—that all things being alike, as regards shape, texture of skin, &c., cows with well developed escutcheons, will in a large majority of cases, be found to be the best milkers, and above an average; while on the other hand, those with very small escutcheons, will be found under, or at most, not above an average in their milking properties.

In calves the escutcheons show the shapes which they are afterwards to assume. They are more contracted only because the parts which they cover are slightly developed. They are easily perceived after birth, but the hair which forms them is long, coarse, and stiff.—After this hair falls off, the escutcheons of calves resemble those of cows, though of less size. This will enable the farmer to save such calves as will probably serve him as good milkers.—*Farmer and Planter.*

AGRICULTURAL SCIENCE—MANURING.

It has been taught by Professors of Agricultural Chemistry, and apparently on reasonable grounds, that the very worst way to apply manure was to spread it out on the field and leave it exposed. It was argued that this exposure caused a loss of ammonia by evaporation, hence farmers were taught to plow their manures under as soon as they were spread upon the soil, under the penalty of losing a great deal of their fertilising properties. An essay on this subject, by Dr. Voelcker, Professor of Chemistry, in the Royal Agricultural College, at Cirencester, England, contains statements that will surprise our farmers. He asserts that no loss arises from spreading manure on the surface of a field; on the contrary, he asserts, that if spread upon the field and allowed to lie until it is washed with rains, it is more beneficial than to plow it in at once. When spread out on a field, fermentation is stopped, and volatile matter ceases to escape. In the case of clay soils, he remarks, "I have no hesitation to say, that the manure may be spread even six months before

it is plowed in, without losing any appreciable quantity of manuring matters." This is important information to our agriculturists, if correct.

The foregoing is from the Scientific American; but we are pleased to say, that the statement of the "Professor of Chemistry" will not surprise our farmers. The system favored by Dr. Voelcker, is not new *here* in Pennsylvania, at least it is a good deal older than the Doctor's lecture. It has been pursued here, as we have repeatedly stated in our columns, for a number of years, by our best farmers, who are convinced, by careful experiments, that the application of manure broadcast, in late autumn, to the ground intended for spring crops, is better than any other mode of application. It produces larger crops as a rule, and leaves the land in better condition for succeeding crops. A communication in our paper last week refers directly to this mode of manuring. The S. A. is "behind the light-house" for once.—[*Editor Telegraph.*]

BLACKING FOR HARNESS.

Melt four ounces of mutton suet with twelve ounces of beeswax, and twelve ounces of sugar candy, four ounces of soft soap dissolved in water, and two ounces of indigo finely powdered.—When melted and well mixed, add half a pint of turpentine. Lay it on the harness with a sponge and polish off with a brush.

ANOTHER RECIPE.—Take three sticks of the best black sealing wax, dissolved in half pint of spirits of wine; to be kept in a glass bottle, and well shaken previous to use. Applied with a soft sponge.

Another receipt for black varnish is the following:—Best sealing-wax half an ounce; rectified spirits of wine, two ounces; powder the sealing-wax, and put it with the spirits of wine into a four ounce phial; digest them in a sand heat or near the fire, till dissolved. Lay it on warm with a fine hair brush. Spirits of turpentine may be used instead of spirits of wine.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., APRIL, 1857.

This number commences the 3rd volume of the ARATOR. We regret that want of adequate patronage has compelled us to reduce the numbers to 16 pages each; and in this form we must continue it until our subscription list is increased to at least 2,500 paying subscribers. This could be very easily and quickly done, if the friends of improvement in the State would resolve to get up a club of 40 to 50 paying subscribers in each county, and forward their names to the Editor. A small effort on the part of half a dozen persons in each county, would more than accomplish it in less time than a week after forming the resolution. If in the mean time, any of our present subscribers, are displeased at the reduced size of the paper, they can at once withdraw their subscription, and, if in arrears, pay up their dues. But, we doubt not they will generally regard the Arator, in its present form, fully worth the subscription price; and sympathize sufficiently with its Editor and take interest enough in the cause of improvement, to give their aid in extending its circulation, looking to its future enlargements and usefulness.

There are several communications in this number of the Arator which, being on important subjects and of a practical character, cannot fail to interest the North Carolina reader.

We invite practical men all over the State to write for the Arator, and give their experience on every branch of industry. This, with what we can collect of the improvements adapted to our State, from abroad, will give increasing value and interest to our paper, and make it a useful and a desirable companion to every agriculturalist in North Carolina.

RAISING MANURE, &c.

One of our correspondents in this number of the Arator, offers some useful hints on the subjects of raising manure out of Materials on the farm, and of Hill Side Ditching.

We hope our readers will give these matters due attention.

RAISING SHEEP.

A correspondent in this number, calls the at-

tention of every farmer to the importance of adding sheep to his live stock, and shows that they may be raised by all with great profit.

To the reasons which he offers to induce them to adopt this measure, we take leave to add, that the manure of these animals, properly managed, will form a valuable item in the profits which they afford. Mr. Johnson, in the Country Gentleman, gives us convincing proof of this, drawn from his own experience. He has 500 head of sheep, which he feeds high, and finds in the manure a *paying* profit for the feeding. This manure, he says, does best applied to the surface. Sheep manure, we doubt not, is better adapted to this method than any other. From his interesting letter we extract the following, that our practical farmers may read, reflect, and act wisely upon the important facts spread before them. He says:

"You request me to estimate the value of the manure made from my sheep. That is always a difficult matter, as I think good manure almost invaluable. For many years after I came here, I applied the manure directly to my wheat at sowing time in Sept. I then considered that the manured land brought me \$10 worth more wheat per acre than the unmanured, and that was when wheat was from 87½ cents to \$1 per bushel. I know I have enough of manure from the sheep to do forty acres if applied to the surface for wheat in the fall. That would make the manure worth \$400 for one crop; or if I apply it to the twenty acres for Indian corn, I may safely calculate on from 15 to 20 bushels more per acre on account of the manure; and then the land would require no more manure for eight or ten years. It is wonderful what effect such manure has on such land. I have been making rich manure for over thirty years; and that is the best Agricultural Chemistry—better than all the doctor's stuff ever invented; to raise either grain or grass, especially if the manure is applied to the surface.

"Could not you induce some 500 farmers to make experiments in that way, and give the result through the agricultural papers? I know many that apply their manure to the surface as I do, but they won't write for a paper on no account."

Our correspondent F. is informed that his former as well as his late remittance of one dollar each, came safely to hand, and he has been duly credited for the same. His failure to receive the paper must have been owing to some irregularity of the mail, of which we have frequent complaints from different quarters. This we have no power to remedy.

DROPSY.

The Southern Christian Advocate gives the following cure for Dropsy: Take one handfull of the seed of cedar, the same of mullein, the same of the root of dogwood; put into two quarts and a pint of water; boil down to one quart, and add one gill of whiskey. Dose, a wine glass full night and morning. We, of course, can say nothing of its efficacy; but as it can do no harm, it may be worth a trial.

TRANSPLANTING.

The Horticulturist says:—"If it were made a rule, in moving trees, always to reduce the last year's growth to one bud, half the failures in transplanting would not occur—because the head and roots would be brought at once to something like a balance power. Shortening in and mulching transplanting trees ought to be followed as established practical rules, in this climate, in transplanting every deciduous tree needing more care than a willow."

TOO MUCH SEED IN POTATO CULTURE.

The man who should leave eight or ten stalks to grow in a hill of corn would be considered rather green. But many a good farmer will put in three or four times as much seed as is necessary in his potato hill, and think he is pursuing a wise course. The complaint which is so often heard from planting the seed end of potatoes arises from the excess of eyes furnished, rather than from any propensity in that end to produce small potatoes.—The true rule of planting we think is, not a certain number of bushels to the acre, but a particular number of pieces in a hill. We have sometimes seen a dozen or more stalks, and the consequence is a struggle for aliment, and a numerous progeny of small potatoes. From four to six stalks in a hill are enough, and these will give good sized tubers. We like the system of planting in drills, in good land, putting one piece with two eyes upon it on every foot of the drill. A tablespoonful of plaster around each set, will prove a valuable fertilizer. It fixes the ammonia of the atmosphere and increases the dew on the plant. It shows its influence best on sandy and gravelly soils."—*N. Y. Times*.

STAINS OF WINE, FRUIT, &c. after they have been long in Linen. Rub the part on each side with yellow soap; then lay on a mixture of starch in cold water very thick; rub it well in, and expose the linen to the sun and air till the stain comes out. If not removed in three or four days

rub that off and renew the process. When dry it may be sprinkled with a little water.—*Granite Farmer*.

HEN MANURE may be made equal to guano by mixing with it slacked lime, plaster, salt and ashes. A writer in the Country Gentleman has given it a fair and successful trial for corn. As often as three or four bushels accumulated, he composted it as follows: With three bushels of hen manure he mixed two bushels of thoroughly air-slaked lime, (ashes would answer as a substitute for lime,) one bushel of plaster, and about four quarts of salt he then threw it into a box, secure from the weather, and let it lie until wanted for use. In the spring, when removing it to the field, he found that he had a manure of the real guano "smell." When ready for planting, he dropped in each hill a small handful, taking care to cover it lightly with earth before depositing the seed. To test its value he left two rows in the center of the field on which there was none applied. At the first hoeing, the most inexperienced eye could detect a decided difference, and as the season advanced, two rows through his cornfield looking as though suffering through some mysterious dispensation of "wind or weather," as compared with the remaining portion of the field. In the fall he topped the two rows on which he had applied no home made guano, and two rows immediately adjoining. From the first two rows he husked $5\frac{1}{2}$ bushels, from the two adjoining rows $7\frac{1}{2}$ bushels. From each he threw out 2 bushels of corn not marketable, making a difference of $2\frac{1}{2}$ bushels of good sound corn. He had over one hundred rows of corn treated in this way—yield an additional increase of $2\frac{1}{2}$ bushels to the row—making 50 barrels of corn from the droppings of 40 fowls. The whole field was alike manured from the barn yard. This shows the importance of attending to little things—especially of saving every particle of manure about our premises.

ROSIN OIL.

This is a new development of one of the many important resources of the South, which the lack of inquiry and enterprise have long suffered to remain in abeyance. A company has been formed in New Orleans, called the "Louisiana Oil Company," which, we learn from the Crescent, "is in a most prosperous condition, and will no doubt, reap enormous dividends on their investments." They manufacture a valuable oil from Rosin; and another company, we learn from the same source,

now in process of final organization in New Orleans, called the "Southern Oil Company," embraces five of the most productive pine growing States of the South—North Carolina, South Carolina, Georgia, Alabama and Mississippi. Operations are to commence at an early day and immense profits are expected to be realized.

SPRING.

So backward a Spring as the present never was known in this region. With the exception of the month of February in which we had mild and pleasant weather throughout, the temperature has been cold, wintry and cheerless up to this, the last of April. The buds, in the woods where the leaves ought to be half grown, are just cleverly bursting; early garden vegetables have nearly all been killed; fields and gardens all are sear and barren; and the farmers generally, we learn, are plowing up and replanting their early corn. The prospect is, indeed, gloomy. Corn is selling at \$1 to \$1.10 a bushel, and fodder at \$1.50 per hundred. With all this staring us in the face, we should all apply ourselves with increased diligence to the various branches of husbandry, with a deeper sense of our dependence upon Divine Providence, and with more earnest and constant prayers to Him alone "who giveth the increase," to crown our labors with success and bless them with an abundant harvest.

Bad as are our condition and prospects, they are not so discouraging as in other portions of our country. In Texas especially, they are peculiarly distressing. The Brenham Enquirer, published at the Seat of Justice of Washington County, dated about the middle of April, gives the following gloomy picture of the State of affairs there: It says:

THE CROPS.

"Truly our planters have much to contend with the present season. At no time during a residence of seventeen years have we witnessed a more propitious prospect for a heavy crop than in February last. Every plantation seemed to be well broken up and the soil in the fine condition to receive seeds, and soon the warm spring like appearance of the weather added to the putting forth of the rich foliage of the forest and the springing up of the grass and flowers covering our prairies with a rich carpeting—songs of the feathered tribe—in deed all nature seemed to smile and bid the sower to sow the seed. Eager, and with delight did the planter obeyed the summons—the weather continued favorable; right soon the seeds came up, and

received a hearty greeting by an honest yeomanry, causing the planter to wear a smiling face in the pleasing anticipation of a rich harvest. But how soon was the prospect changed! March, (the month of old Boreas,) appeared and soon brought the unwelcome visitor—a heavy frost—that nipped the earth of her rich plumage; and bid the planter to do his work over. Although his seed were nearly exhausted and but little wherewith to subsist his team, he again went forth and sowed.—The earth was dry and caused complaint for the want of rain—in due time the watery element was supplied, the seeds germinated and put forth propitiously, causing a renewed anticipation by the busy planter, who was yet again to meet a similar disappointment.

"On Saturday morning last the clouds presented a watery hue—"more rain" was the tenor of many petitions; night spread her dark mantle o'er the earth, when the clouds gave way fully answering the prayer of the anxious planter. The morning dawned happily to the growing interest. Soon a deep black cloud was visible to the North—a token too well understood by the old Texan, a few more minutes and his fears were realized; a "norther" cold as the hills of Iceland swept o'er the face of the earth followed by a hail storm divesting the forest of its rich foliage—'t'was winter indeed.—On Monday morning the fears of the planter were two well realized; every vestige of his crop was destroyed by the frost—his hopes blasted.

Again, we notice the planters busily engaged in endeavoring to procure seed and planting the third time, after having performed the labor necessary to grow an ordinary crop."

The San Antonio Herald says that, in that region, notwithstanding the dry weather, corn is looking quite well. The chief injury worked by the drought is, that it prevents farmers from securing their stands where the late severe frost has compelled a replanting. Corn that is up would not suffer so much.

The Nacogdoches Chronicle of April 7th says; We were visited by a severe norther on Sunday and a hard freeze on Sunday night. Every young green thing out was killed and some that was n't out. The growing corn crop was nearly all done for.

The Galveston Civilian, of the 10th April, says; There is now no doubt but the frost on the night of the fifth was general throughout this State, killing corn and cotton effectually. We have the old woman's consolation, that other folks suffer too.—The same night was much more destructive to

crops in the west, north and a large portion of the south.

Cheer up, farmers and planters! On the 15th of April, 1849, the crops throughout Texas were totally destroyed by frost; yet the people, having their grounds in good condition, replanted and had an abundant harvest. Replant, cultivate well, keep a stiff upper lip and leave the rest to Providence.

A correspondent of the *Civilian*, writing from Grayson county, Northern Texas, says:

On yesterday morning (5th April) we had a considerable snow storm and last night a very severe frost, and I am very fearful the growing wheat in this county is all ruined: much of it was already heading and never looked more promising. The leaves on the trees look as if fire had run through the forest; in fact, the leaves and young sprouts are killed as dead as if they had been burned. The garden vegetables are killed: the corn is cut to the ground, but I think it will come out again: fruit all killed.

The *Galveston Civilian* of the 20th April, has the following:

It is some consolation to know that the effect of the late frosts has not been so disastrous to the crops as many had supposed. Much of the young corn, apparently dead at first, is springing up anew, and, in the coast region, at least, a large amount, of pretty early planting, is apparently uninjured, and presents a vigorous and thrifty appearance. We hear also that much of the cotton, planted previous to the last frost, but not up, is coming out finely.

REMEDY FOR HOG CHOLERA.

Salt, Sulphur, Charcoal—equal parts—in their food; table spoonful of the mixture twice each day. Keep the animal warm. So says Dr. Dadd.

VALUE OF PEAS AND BEANS.

These articles, says an *Exchange*, have been found, by chemical analysis, rich in nitrogen.—The inference has been that they would be specially useful in supporting the waste of the muscles of animals, and it has been suggested that they would be particularly useful in the production of wool. They are evidently valuable for these purposes, but not the less valuable for the production of fat. Those persons who have used peas for fattening hogs, consider them worth as much as Indian corn. In districts where that grain is not grown, very fine pork is produced from peas.—Dickson, in his work "On the breeding of Live Stock," states that a sweep stakes was entered in-

to between five East Lothian farmers, to be claimed by one who should be pronounced the best feeder of cattle. Forty cattle of the same breed, and in equal condition, were divided between them, as fairly as possible. They were put up together the second week in September, and killed at Christmas following. The winner of the stakes fed his animals wholly on *boiled beans* with hay.

GAPES IN CHICKENS.

An Ohio correspondent gives the following remedy: "Feed little or none on corn-dough—but feed plentifully on cheese made of lobbed milk or clabber, crums of wheat and corn-bread. We also keep clabber in a trough always within reach of young chickens. This we believe has been a perfect remedy in our hands for gapes, for the past seventeen years."

VALUE OF A SINGLE TREE.—The bark of an oak tree felled in 1810, in Monmouthshire, England, was sold, for \$1,000 and its timber for \$3,350.—Who planted that acron?

AGRICULTURAL SOCIETIES AND CONVERSATIONAL MEETINGS.

We earnestly call the attention of the friends of Agricultural Improvement in the state, to the suggestions of our correspondent, "A Debtor," commencing on the first page of this number. His article shows clearly the importance and usefulness of frequent meetings and free interchange of experience and opinions among the farmers.

The first step towards this desirable practice should be the immediate organization of county agricultural Societies in every county in the State, with committees of Enquiry and Vigilance for every neighborhood, and a Central Executive Committee, to execute the orders and carry out the objects of the Societies. The Societies should hold at least regular annual meetings, and the Committees should meet as often as their duties may require. At the annual meetings, Reports should be made by these committees, of such information as they may have collected during the year; and brief statements made of their methods of cultivation, management, experiments, and results, by the members—all for publication in our agricultural journals. This would awaken interest, create emulation, stimulate action, bring out practical information, and accelerate progress, to an extent stretching far beyond the expectations of the most sanguine.

Let these organizations, then, be created at once in every county, though, in some instances, in

more than half a dozen farmers at first can be induced to come into them. If a few only will take the matter in hand, with proper determination, and diligently persevere in the prosecution of their improving and pleasing duties, their members will gradually increase—the circle of their influence will widen—a general interest will be aroused, and large numbers will presently flock to their standard.

If some competent Agent, under authority of the State Agricultural Society, could travel over the State, address the people on the subject, and aid in forming these Societies, a thorough organization, auxiliary to the State Institution, and highly useful in accomplishing its patriotic and beneficent objects, could be effected, and an incalculable amount of good accomplished. We throw out these suggestions for the consideration of the officers of the Society and of the people.

THE SOUTH SIDE DEMOCRAT,

A valuable commercial, and an able political paper, published daily, in Petersburg, Va., is numbered among our select Exchanges; and we take pleasure in calling attention to its recent enlargement, improved dress, and increased value to the reading public. We wish its worthy conductors all pecuniary prosperity.

We are indebted to the Editor of the South Carolina Agriculturist for a copy of the Premium List of the S. C. State Agricultural Society for the annual Fair to be held at Columbia, on the 10th, 11th, 12th and 13th November next. It appears to be a liberal and judicious list, neatly printed in pamphlet form, convenient for circulation among the people. The list of the North Carolina State Agricultural Society has not yet, we believe, made its appearance. It is desirable that the Premiums offered should be published as early, at least, if possible, as the beginning of the year.

From the Genesee Farmer.

CULTIVATION OF PEAS, &c.

EDS. GENESSEE FARMER:—Your article headed "Premiums for short Essays," has just attracted my attention. Among the subjects suggested by you, I observe one "on the cultivation of peas." I have had singular success in the cultivation of that vegetable, and if others will adopt my method, they will find it a most advantageous one. It is as follows:

Dig a trench of one foot deep, and

then fill it again with good soil taken from the surface, to within six inches of the top. This, of course, leaves the trench still six inches deep. Plant the peas in the trench thus prepared, and cover them with six inches of good soil also taken from the surface. By the time the peas come up, the trench will have settled about two inches, and this is to be brought nearly even by subsequent hoeings. I say nearly even because there should always be in our dry climate, a hollow left to catch and hold the rains.

Now for the results. The peas will make their appearance notwithstanding the great depth of planting; there need be no fear about that. They will grow rapidly when started, will not be affected by drought, and will bear three times as long, and more than three times the quantity of peas planted in the ordinary way. There will be blossoms and mature fruit on the vines at the same time, and the vines will not put on the usual yellow, sickly appearance at the roots which is so soon followed by the drying up of the whole stock. If the soil is free from clay, it is better to cover them eight inches, even, rather than six.

Let those try the experiment who have been accustomed to plant in the ordinary way, and they will rejoice that they were subscribers to the *Genesee Farmer*.

A PREVENTIVE.

Many affections, such as bowel difficulties, cramp in the stomach, and the like occur in the night; and persons are often kept awake by an approaching diarrhoea, without knowing what is the matter till it comes on. Many of these afflictions may be obviated or prevented, by simply *lying upon the face*, when the pain or uneasiness occurs. The warmth of the bed, thus applied to the seat of the difficulty, in the same manner as heat applied in season to the seat of a cold, will completely dissipate it. A knowledge of the above fact has been of good benefit on a multitude of occasions to a person of our acquaintance. —*Prairie Farmer*.

GREAT IMPROVEMENT IN SOAP. POWDER FOR RAZOR STROPS.

The wife of an American agriculturist has been experimenting in soaps, and finds that the addition of three quarters of a pound of borax to a pound of soap melted without boiling, makes a saving of one half in the cost of soap, and of three fourths the labor of washing, improving the whiteness of the fabrics; besides the usual caustic effect is thus removed, and the hands are left with a peculiar soft and silky feeling, leaving nothing more to be desired by the most ambitious washwoman.

Take equal parts of sulphate of iron, (green copperas of commerce,) and common salt; rub them well together, and heat the mixture to redness in a crucible. When the vapors have ceased to rise, let the mass cool, and wash it, to remove the salt, and when diffused in water, collect the brilliant scales, which first subside; these, when spread upon leather, soften the edge of a razor, and cause it to cut smooth.—*Scientific American.*

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever introduced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other.—The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from EX-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

FORT SMITH, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Gorce, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supercede the use of every other," and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw "that pea-vine," and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.

B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says:

"If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 14 acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail.—They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

* * Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount of their orders are forwarded immediately.

Feb. 37.—3m's

WILLIAMS & HAYWOOD,;

RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,
Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,
Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-1f.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1836)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-4f.

FARMER'S HALL,

RALEIGH, N. C.

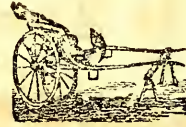


The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as **JENKINS' OLD STAND**, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-1f

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including Records for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.


THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.


THE Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

THE "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.


\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857.  Here are fine chances to secure cash prizes.

THE SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

 **TERMS.**—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent *gratis*. Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.


 Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good


and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

 I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

 The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers that he has obtained from John Kirkpatrick, Esq. of this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, that planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 1½ feet, at one dollar per package. If sent by mail, thirty cents must be added to pay postage.

SAM'L J. HINSDALE,
Fayetteville, N. C.

Jan'y 15, 1857.

12 2t

INDEX TO APRIL NO.

Conversational meeting, Rotation etc. 725; Putting in Manure, Covering Corn, 727; Wheat and Oats, 728; Raise Sheep, 728; Culture of Cotton, 729; Manuring and Hill-Side Ditching, 730; Milk Cows and Escutcheons, 731; Agricultural Science—manuring, 732; Editorial Matter, 733 to 737—Raising Sheep, 832; Dropsy, Transplanting, Too much Seed for Potatoes, Hen Manure, Rosin Oil, 734; Spring and Crops, 735; Remedy for Hog Cholera, Value of Peas and Beans, Agricultural Societies and Conversational Meetings, 726, &c.

PAYMENTS FOR THE ARATOR SINCE MARCH No.

Moses Teague 2 dollars and 50 cents; John W Norwood, 2 dollars; R R Bridgers 2; J M Towles, ad. etc., 7; Burns & Co. adv., 6; and the following one dollar each: B Kinney, John Stafford, Geo. W Valentine, R W Gibson, R C Wilson, C Keuster, H B Lloyd, Micajah Madry, J F Cuthrell, John Walker, Dr. Jos. W Ross, James Long, J H Biggs, W A Faison, J C Barber, Seth Woodall, James Starrett, T S W Mott.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS,

VOL. III.

RALEIGH, MAY, 1857.

NO. 2

NORTH-CAROLINA ARATOR.

BY THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines each and every insertion, one dollar—containing more, at the same rates.

For the Arator.

A DEEP SOIL.

Mr. Editor:—All acknowledge the value of a deep soil; and when we have not, it is our business to make it so, as well as to cultivate to the full depth that which nature has provided for us.

Those which we call our worn out lands, may be reclaimed and fertilized by breaking deep, and using the pea and clover fallow. Many lands of this description have been brought out by this method, both in our country and in Europe. By it the mineral elements necessary for plants, are brought up and mingled in the surface, and the decaying green plants furnish vegetable mould, which, by time and patience and perseverance, we have the satisfaction to see converted into vegetable mould with a due mixture of the mineral—rich and productive above what it was in its original state. In allusion to this,

a late writer, says: "We hear in America, much of the exhausted soil of Europe. I have seen none of it. So far from being exhausted, I think the soil of Europe is now better than ever." And here let it be noted that it was improved in the very way above pointed out.

Speaking of this matter, the American Farmer, truly remarks:

"There is no reason to doubt the fact, but how can this be? The writer attributes it to their excellent system of manuring. But what sort of manuring? Remember that the most perfect system of manuring can scarcely return the mineral or inorganic matter that is consumed upon the farm. But every pound of grain and of food consumed away from the farm, takes off some portion of these mineral elements, which are irretrievably and forever lost to the soil. Now estimate the countless millions who have been consuming these elements, in cities, in manufacturing towns, in travelling by sea and by land and that for centuries, and how small will appear the amount restored to the soil, compared with what has been forever wasted. It is almost as nothing. Even the bones they use are mainly the

product of their own soil. And the few bones they get from other countries, some lime and magnesia from their rocks, and guano of late years, have been the substitutes of the waste of centuries. Yet "their lands are richer than ever." Let us take heart then, and, dig for these minerals as for hid treasure. They are a mine of wealth hidden under the very heel of our ploughs.—Bring them up to the atmosphere, open them to the rains, mix them with decomposing barn-yard manure, or a rotting clover sod or pea fallow, and be sure of the result. The earth is not yet worn out by a great deal, it wants mainly proper working. Our "manifest destiny" is not to be cut short by famine, even if science fails to supply us with better lights. Let us only work faithfully up to our present knowledge.

"The mineral elements of plants are present in the soil in a soluble state, and available for plants, or in chemical combinations which require to be broken up. This last is a gradual and slow process. Nature thus husband her resources. Nor will she dispense her gifts too freely to those who do not properly seek them. It may be very good economy to use phosphates and other mineral substances in a well prepared state, even when they abound in the soil, if they are not there in condition to be taken up. But what waste it is to spend our money upon these, and fail to use the ready means to make what we have in our hands available. The action of the atmosphere, the dissolving power of rain and snow water, the freezing and thawing of the soil, the vital power of the plants themselves, are forces operating continually to bring them into use. Closely packed down beneath the plough, they have been out of the reach of these influences. It is our business to bring them into use, and get the benefit of them, by the application of proper means. Of these, deep and thorough digging is the first; the use of green crops with their supply of ammonia and carbonic acid, is another. These perform the double

office of furnishing organic elements, and bringing into use the inorganic.—The effect of lime is doubtless owing mainly to its action upon these minerals. The great chemist Liebig, attributes the action of Peruvian Guano chiefly to its power of dissolving them. We believe he is right, and that its marvellous effects are due to the large store of mineral elements lying dormant in all our old fields, but put in action by this supply of ammonia."

I need only add, by way of caution, Mr. Editor, that our people should be careful, in plowing deep, not to turn up too much of the subsoil at a time. This will be a temporary injury to the fertility of the soil. An intelligent and eminently successful Edgcombe farmer, in a valuable communication for your paper some considerable time ago, informed the public of the important fact, that in his experience, he had found that it would not do to turn up more than half an inch of the subsoil at a time; and that this might be profitably and safely done at each subsequent breaking until the desirable depth of soil should be obtained. The subsoil plow may always follow the turning plow, in the same furrow, as it does not turn but loosen the dirt, six to 8 inches deeper, or more, where desired. Let the farmers bear this in mind, and go a head as vigorously as they may, without fear, and without flaging.

Very respectfully yours. S. P.
Davie county, N. C., April 10, 1857.

For the Arator.

Mr. Editor:—A cheap way to improve worn out lands, would be the following:

About the first of August, with a strong team and a good plow, turn over grass land; run the plow six or eight inches deep; sow $1\frac{1}{2}$ bushels of winter oats and six quarts of clover seed, on an acre, and if very poor 200 pounds of guano. The next year, when the oats are ripe, turn all under again with a good team, and sow clover as above.—Continue this four or five years, and your land will be in order for more pro-

fitable crops. The oats need be sown but once, as they will ever afterwards seed the ground themselves if they stand until ripe. The clover may be omitted if seed are difficult to be procured.

Another method, sow six quarts of clover seed per acre, with rye. The next year cut the clover for hay; and when it is time to sow rye again, turn in your clover and sow rye and clover as before. After a few years, you may sow wheat and clover if you plow deep enough.

The above plans, if persevered in, will work well in improving old lands. We should adopt some plan of this sort, in connexion with manuring.

ORANGE.

For the Arator.

TO PROTECT VEGETABLES IN DROUTH.

It is a well ascertained fact, that the ground covered with stalks, straw, leaves, or any decaying vegetable trash, matter, will long retain its moisture in the severest drouth; and vegetables growing in the ground so covered will flourish, while those in the bare ground will wither and droop. I have seen, often, this difference; and should it not furnish a useful hint, more especially in the cultivation of the garden? I have known it extended even to the corn field. An old field had been taken in, and put in corn: one half was maled with leaves from the woods, after the first thorough plowing; the other half was cultivated in the ordinary way. The season was dry. The result was, the part covered with leaves produced just twice as much as the other. May not our farmers learn something of value from these facts? Gardens, at least, may be covered with stalks, leaves, straw, the branches of the pine broken up small and thickly laid over the ground.

CASWELL.

For the Arator.

ROTATION IN CROPS.

Our farmers and planters, generally, have yet to learn their alphabet in this method of cultivation. The practice

and experience of others must be their guide. We cannot adopt precisely the same plan that prevails in other sections of the country; but by learning the systems there pursued, with a small modicum of common sense, and a little swell of the bumps of arrangement and application, we can easily bring into practice a modified plan suited to our condition.

With this conviction, I have read with interest, and, I trust, profit, the remarks of the Country Gentleman, for April, on the subject. That paper says:

"The necessity for *some* rotation in crops, with the reasons which create that necessity, are familiar to all who think and inquire into the *why* and the *wherefore* of opinions, customs, and practices of what ever kinds. But though the necessity of *some* rotation is generally admitted, it is a question which it is difficult to decide correctly, what that rotation should be, to secure the best results. It requires no little knowledge and the exercise of considerable good judgment to determine aright the system of rotation that shall be best for any particular district, farm or locality, for the decision demands acquaintance with the *general* principles of vegetable growth and culture, and also with the *particular* circumstances and considerations of climate, soil, seasons, markets, &c., &c. Many might reconsider the question,—“What system of rotation is the best for us?” every now and then with some prospect of advantage.

“We have lately met with an account of the system of rotation adopted by an excellent farmer—an Ex-President of the Agricultural society of the State of Michigan—which contains so many good points as to make it quite suggestive and well worthy of attentive consideration. Those especially may study it with advantage or derive from it useful hints, who have not yet fixed upon any particular system of rotation, or may be willing to consider the subject when any new light seems to be thrown upon it, either from their own experience or from that of others. Mr. A

Moore, the gentleman referred to, has furnished an account of his system of rotation, by request of the Editor of the *Ohio Farmer*, for the columns of that paper, and from that communication we obtain the following particulars.

Mr. Moore's home farm consists of 160 acres of prairie land, 20 acres of which are occupied by house, garden, orchard, lawns, barn-yard, and four small lots used for pasture, soiling, vegetables, &c. The balance of the farm—140 acres—is divided equally into seven 20 acre lots, which are farmed according to a system of rotation which embraces seven courses, thus: 1, Corn—2, Oats—3, Wheat—4, Clover—5, Wheat 6, Wheat—7, Clover. Each of the seven fields goes through this seven-year course in regular order, and is, in any particular year, at a stage in the course different from any and all of the others.

"1st Year.—The rotation commences with a corn crop, for which a clover sod well filled with seed, is plowed under, with the manure of the barn-yard. Mr. M. plows deeply for this crop, that the clover seed may not be disturbed in cultivating the corn, nor in getting in the next year's crop. This peculiarity of Mr. Moore's management—burying his clover seed—deserves consideration.

2d. Year.—Mr. M. plows early and shallow for oats, not yet disturbing the old sod. After the oats are harvested and the ground cleared, he plows deeply for wheat, bringing up to the surface the old sod with the clover seed, which when sowed to wheat and well harrowed, will again seed the ground well to clover without the trouble of sowing any seed.

"3d. Year.—A crop of wheat and fall pasture.

4th. Year.—A clover crop, which is pastured till July, when much of the seed is ripe, when again a clover sod is plowed under deeply, with the seed, and wheat sowed and well harrowed.

5th. Year.—After the wheat is harvested, the stubble is plowed deeply to bring up the clover seed again, then harrowed, then sowed to wheat, and

harrowed and rolled.

"6th. Year.—A crop of wheat and fall pasture.

"7th Year.—A crop of clover for mowing, the land having been well seeded by the plowing process. Mr. M. makes hay early, and reserves the second crop for seed. When ripe, he picks off the heads with a one horse clover picker, enough being left on the ground to seed it as before.

"8th. Year.—Rotation commences, the same as the first, with corn.

By this system Mr. M. has yearly 60 acres of wheat, 20 acres of oats, 20 acres of clover for mowing, the same 20 acres for clover seed, and 20 acres for pasture. He has also the straw of 80 acres, and the corn-stalks of 20 more, for the winter feeding of his stock.

"On the small lots near the house, Mr. M. raises drilled corn for fodder, and some millet for hay, these being favorite crops with him.

We do not present the above sketch of Mr. Moore's judicious system of rotation and farm management, with any expectation that it should be exactly copied, but for the hints and suggestions which it furnishes. Mr. M. has tried other systems; and adopted this at last mainly because soil and climate were favorable for wheat and because wheat was the most profitable crop.

"One advantage of an established system, of rotation, like this of Mr. M., is that one may know before hand just how much help will be needed, how much team-work will be required, and how much stock of the various kinds can be kept profitably. Some calculations may also be made of what the income should be from sales of grain and clover-seed; but the chief recommendation of this or a like system, according to Mr. M. is this: the owner may have the satisfaction of knowing that his land is constantly increasing in fertility."

I hope our farmers, Mr. Editor, will read and reflect, and fall into the plan of shifting and resting their lands.

A FARMER.

TEXAS FLOUR IN GALVESTON.

Messrs. Kauffman & Klaener, of this city, have just presented us with a sample of superfine flour from a lot received by them, from the mills of Messrs. Gold & Donaldson, Dallas, Texas. It is not new to us, for we have seen and swallowed enough wheat bread in that portion of Texas to know that it is superior in all that constitutes nutritious and wholesome food to flour shipped from the west. From the letter of the manufacturers to Messrs. K. & K. we extract the following sensible and well considered remarks, fully believing that when the iron horse reaches our wheat region their suggestive prophecies will be fully realised. They say:

The article sent has been manufactured over 16 months—and still retains perfect sweetness, or did when it left here, and will continue to unless it should get wet in transitu. Our object in this is to show you the great Superiority of Southern over Northern wheat in a manufactured state, and its capability of remaining free from fermentation in turning sour in a southern climate and hence the great advantage it possesses for transhipment to the South American and Cuban markets. We are satisfied that Flour made from Southern wheat in a southern climate will keep much longer and bear transportation better, especially to the South American Markets, than the Northern Flour. As you are receiving cargoes of Coffee from Rio and other ports, we are of opinion or would suggest to you whether a return cargo of Flour, would not be important, especially as our harvest is two months earlier than the Northern or Western.

We can arrange to barrel it, and deliver it at Galveston probably as low as the Western Flour is delivered there. We can do it lower after we get Rail Roads. We can turn out 50 bbls. per day when needed.—*Galveston Civilian.*

HOW TO CLEAN ANIMALS AND PLANTS OF VERMIN.

The *Agricultor* publishes a letter from M. Raspail, giving an account of a plan

for destroying vermin on animals, and also trees and plants. The process he recommends is to make a solution of aloes, (one gramme of that gum to a little water,) and by means of a long brush to wash over the trunks and branches of trees, with this solution, which will speedily, he says, destroy all the vermin on them, and effectually prevent others from approaching. In order to clean sheep and animals with long hair, they must either be bathed with this solution, or be well washed with it. The writer mentions several trials which he had made of the solution with the most complete success, and very strongly recommends it to general use.—*Paris Correspondent of Morning Advertiser.*

From the New England Farmer.

HOW TO RAISE ONIONS.

MR. EDITOR:—I find in your valuable paper of last week an inquiry by a subscriber how to raise *onions*? I have had some fifteen years experience in raising vegetables. My way to raise onions, is, first to manure with rotten manure, and plow as early in the month of April as the ground will admit; pulverize the top of the ground by raking with common hay rakes, so that it shall be perfectly free from lumps and then sow the seed with the seed sower; no matter if the ground freezes, or if the snow falls, it will not injure the seed. I recollect once of having my onions up so that they could be distinctly seen in the drills at a distance, and had a fall of snow of four or five inches deep upon them, without doing the least injury. The great secret is the sowing early in the season and pulverizing the ground thoroughly before sowing. I never have had any trouble with onions in bottoming.

The old rule is, that the tops should begin to wilt or die before dog-days.—My yield is from six hundred to eight hundred bushels to the acre. I think they are a sure and a profitable crop. I sow them in drills fourteen inches apart.

HOLLIS CHAFFIN.

Providence, R. I. Feb. 3d, 1857.

From the New England Farmer.

CAN LAND BE MADE FERTILE WITHOUT STABLE MANURE?

MR EDITOR:—I wish to improve a piece of high land which is pretty much run out. The soil is of a light, loamy character, plentifully supplied with boulders, subsoil much the same, except difference in color; lays to the southeast, and with liberal culture gives good crops of corn.

I wish to know if I can avoid the expense of stable manure, which is here worth \$7,50 per cord? (a.)

I have any quantity of meadow muck for the hauling, which will cost 25 or 30 cents per ox load; can this be used with ashes at \$12 per cord, to advantage, and would it prove a substitute for stable manure; if so, in what proportion should the muck and ashes be used? (b.)

Will muck thrown out in January, be fit for use next spring? (c.)

Should the muck lie in a heap this winter, or would it be better to spread it on a plowed piece and sow the ashes on in the spring and plow all in together? (d.)

Would coal ashes for the hauling one mile, be as good and cheap for the purpose as leached wood ashes, at \$12 a cord delivered? (e.)

Reading Mass., 1857. W. SPEAR.

REMARKS.—Lands may be made fertile without the aid of stable manure, but the question to be settled is, whether they can be made so *at a profit*.—Many persons can make two blades of grass grow where only one grew before, but the operation is quite similar to those in commerce or manufactures, where losses are incurred; although they increase the object sought for, yet it is at so costly a rate that to persist in it would inevitably lead to failure and starvation. What ever we cultivate must be done at a profit, perhaps not always in the first year, any more than that the manufacturer should find a profit on his outlays of buildings and

machinery the first year. If we fell the forest, drain and remove rocks from a piece of land, it would be unreasonable to expect a full return from the first crop.

After land has been reclaimed, cultivated and exhausted, it presents another attitude; the question now will depend upon the kind of land, to be wrought, and its location. If light land such as many of our plains, that may be plowed rapidly with one or two horses, so that there shall not be much tax for travel, it may be cultivated *at a profit*, without adding stable manure. This may be done by sowing with rye, thrashing in the field, reserving the berry and returning the straw at once to the soil by plowing it under; or by plowing under two or three crops of buckwheat when in bloom. By this mode you extract valuable matter from the atmosphere and mingle it with the soil, and by continuing the process very lean and hungry lands may be made prolific *at a profit*! When once brought up they may be easily kept so.

In some such way, we think the piece of land in question may be redeemed and made to pay as it goes. But whether it would be the *most profitable* course, taken in connection with other lands of the farm, we cannot judge.

(a.) See reply to (b.)

(b.) If ten cords of good meadow muck, having been frozen through one winter, finely pulverized, and each cord thoroughly mingled with ten bushels of ashes, were spread upon a plowed acre of your field and then worked in with a cultivator, the corn planted, all weeds and grass kept down, and the ground frequently stirred, whether there were weeds or not, we think you would get, in a favorable season, 30 or 35 bushels of corn. At the average price of northern corn, that would pay well for all the expenses. This being the case, you could afford to leave all the fodder on the ground, and as soon as the ears were gathered, cut up the stalks, and as the plow advances let a hand follow

and lay them lengthwise in the furrow to be entirely covered up the next time the plow comes round. Here you have quite a liberal manuring of prime vegetable matter. The next year, if the land is of a sandy quality, apply the same amount of muck and ashes again; but if not quite sandy, add what the muck would cost in wet bone-dust, and work it in with the harrow.

We have found great benefit, by a process similar to this, on much such land as you describe.

(e. d.) Muck thrown out in autumn should not be in heaps so large as to prevent its freezing solid. When the ashes is mingled with it all lumps should be broken and thrown out.

(e.) We think not—the value of coal ashes, however, has not been satisfactorily tested.

Will you experiment upon these suggestions, and give us the result, especially as regards the coal ashes, tried by the side of the leached wood ashes, all other things being equal?

From the New England Farmer.

A SHIFTLLESS FARMAR.

MR. EDITOR:—It is a cold, dreary, rainy evening; and I seat myself to give a short sketch of a neighbor, who is a slack, shiftness fellow.

The family of Mr. J. Slack consists of himself, a man of middle age, his feeble mother, and two sisters; both the latter are past thirty.

In all matters pertaining to the farm Mr. S. fully verifies his name; he never hoes his corn or potatoes more than once, and sometimes not that; he sells his manure, and *enriches* his land with *cider pomace*, consequently his crops are always inferior, and sometimes almost nothing. If I am not mistaken he has some potatoes that are not dug even now. He had one field of corn that he did not harvest at all, and he could not have had more than eight bushels of corn that he raised this year. Since I can recollect, he has not had more than one cord of wood at his door at one time. In the summer season he gets

one load on his sled and then lets it stand until it is all gone, and some of the fence, also, before he gets any more.

His farm is so run out that he does not cut any number-one hay, but lets it stand until it is so *matured* that it is very poor hay. He has the advantage of most farmers, for he feeds his mowings *eleven months in a year, and cuts a crop of hay too*. There are no sheds or other shelter, except his barn, around his yard, in which his cattle frequently stay several hours in a cold winter's day, looking as though they never knew what comfort was. This master never houses his wagons or vehicles of any kind, but they stand out, exposed to the effects of heat and cold, and soaking, and drying, alternately.

I can assure you, Mr. Editor, that all I have said respecting this man is truth, and much more might be said of him.

S—N.

Ashby, Dec. 11, 1856.

HORSEBACK RIDING.

N. P. Willis, in one of his "Invalid Letters," thus speaks of the therapeutic virtues of horse back riding:

It was a secret which I did not discover by books; that exercise, *with the legs of a horse to do the work*, distributes the blood's fullness and freshness to the extremities; but that exercise, *with your own legs to do the work*, draws the fullness and freshness from the extremities to the centre. Life and strength, that is to say, are centrifugal if you exercise on horseback—centripetal if you exercise on foot. To test this, you have only to do the two things. But, look in the glass, when you return from a *ride* in the saddle, and you will see that the hollows under your eyes are filled out and freshened in color, and that the incipient lines in your face, (for I presume I am addressing a middle-aged, charming woman,) have disappeared wholly or become indistinct. Then, look in a glass on your return from a *walk*, of equal exercise, and you will see just the contrary—your eyes sunken and the lines of your face deepened with the

fatigue. Or, still more demonstratively—compare the fresh colored fullness of your hands and fingers' ends, after the one exercise, with their dragged and depleted sparseness after the other.

A recognition of the same fact may be seen in the advice given by medical books to literary men—or men whose brains are over worked by prolonged attention of any kind. 'Avoid walking as an exercise.' And the reason given is, 'that the concentrated exertion at the hips and loins of the pedestrian, pull directly upon the forces of the spine which sustain the brain.' And it is nature's rallying law—or calling in of recruiting power from the extremities to supply the demand upon the centre of the system—which equally robs the brain, the face and the hands of their proportionate supply of fullness. Your beauty, madam, merely pays its recruiting tax with the rest.

TOO MUCH LAND.

That the father of our country wrote wisely in the above quotation, as indeed he always did, we have not the least doubt. We shall venture, however, to differ with the *Germantown Telegraph* in part, though in the main we agree with it. The error of Americans is not exactly in having more land than they *can*, but more than they *will* cultivate.

A man without capital *cannot* cultivate much land, and do it well. The necessity of a floating capital, equal to something like half the value of the land has not yet been considered by the great body of American farmers. We insist, that with a floating capital, adequate to the business, kept always at controle, an energetic farmer, who understands his business, can cultivate ten acres, and make a good business, of it; he can cultivate fifty and make a better business of it, or five hundred, or one thousand. Ability to cultivate is not to be measured by a man's physical strength. On this scale five acres near a city, or fifty far inland, would be enough for any man. It is to be measured rather by one's knowledge of soils,

cross and markets, and by his ability of keeping a good many irons hot without letting any of them burn. If a farmer is master of his trade and has a business capacity, why limit him? It is as true now as it was in Washington's time, that "a little farm, well tilled," is a good thing. But it was true then and is now, that a farmer of sense, intelligence, judgment, skill in his business energy and ambition, should not be limited. Don't let us talk about how much land he *can* cultivate well, but how much he *will* cultivate well. Let him have as much as he *will* keep in a highly productive state, be it ten acres, or one hundred, or one thousand. Ten acres is the best figure for one man, a hundred for another, and a thousand for another; just as a shop only large enough for one person to work in, is the best for one shoemaker, and one large enough for a hundred to work in together, is better for another. If successful farming depended solely or mainly upon mere physical strength, if the farmer were doomed to be an ignorant drudge, as some people seem to think, we would commend small farms; but we believe no such thing. It is a business for the loftiest intellect as well as the lowest. Let those who will, rise by it to the highest position in society. Some at least can. *Plough, Loom and Anvil.*

SKILL VERSUS POOR LAND.

The following remarks are taken from an Address by Professor Marey, before the Hampden County Agricultural Society, at Springfield, in October last. They show that the poorest land in the State cannot long refuse to yield its increase when men get hold of it who *think* as well as act:

"There is a tract of the town of Wilbraham on which the farmers of the last generation could not obtain a living though they seemed willing to live poorly. They did not even raise the rye which they ate. This they obtained by going to other parts of the town, reaping rye by the day, and taking their pay in grain which they reaped. Now

that tract is occupied by some of the wealthiest farmers in the town, and they have made their money from the soil which they occupy. That soil *now* grows *rye*—and it grows any thing else that grows in the town. I need not tell you that the present occupants of that tract of country have been active members of your society from its commencement. I am informed that twenty-five years ago, two-thirds of the farms of Ludlow did not pay the current expenses of their occupants, and their expenses then were not so great as the current expenses of the occupants now, but instead of the heavy mortgages that then existed, now there is money to let. What is the cause of the change?—Cause, sirs, there is cause enough. Beside the temperance reformation, to which no doubt they owe something, a flood of light and knowledge has been poured in upon them from the agricultural press and from agricultural fairs. And if any are there who do not take the papers, and who do not attend the fairs, still, the light from their neighbors' farms has shone in upon them, and dispelled the darkness in which they would willingly grope."

DOMESTIC RECEIPTS.

TO MAKE YEAST WITHOUT YEAST.—The following receipt, which we believe first appeared in *Life Illustrated*, has been tested and highly approved in the culinary department of our family:

For some time past I have eaten very excellent bread raised with yeast in the following manner: Take as much pulverized salaratus as will lay on a dime, the same quantity of salt and a teaspoonful of sugar. On these three articles pour a pint of boiling water.—When sufficiently cool, so as not to change the nature of the flour, stir in as much as will make it into a stiff batter. The vessel containing this batter must be placed into another vessel containing water quite warm, but not so hot as to cook the flour in the least, and the whole must be kept standing in a warm place until the batter nearly doubles in bulk, which will take about six hours.

This yeast may then be added to flour enough to make two good sized loaves of bread, mixed with warm water, and a tea-spoonful of salt, if liked, placed in the pans and left standing in a warm place a short time before baking.

TO CLEAN KID GLOVES.—Wash them in a mixture of equal quantities of ammonia and alcohol. Then rub them dry. The above solution will also remove stains and grease from silk and cloth.

TO REPAIR BROKEN GLASS.—Dissolve some isinglass in gin, just sufficient to cover it; make the broken parts quite warm (better put them into a warm oven,) dip them into the liquid, and if possible tie them together for a little time.

TO MAKE WASHING FLUID.—Take 1 gallon of soft soap, 2 quarts of soft water, 1 gill of spirits of turpentine, and 5 ounces of sal-soda; boil them together for five minutes. When wanted for use put your clothes to soak over night, and in the morning add one pint of the fluid, and then boil the cloths for fifteen minutes, after which rinse twice in cold water.

RICE BREAD.—One pint flour, one table spoonful butter, one egg, one level teaspoonful soda, two teaspoonsful cream of tartar, a little salt.—

Mix the flour, butter, yolk of egg and milk; dissolve the soda in a little warm water, and beat in the white of eggs; dissolve the cream of tartar in warm water and add last: Bake immediately.

The idle levy a very heavy tax upon the industrious, when, by frivolous visitations, they rob them of their time. Such persons beg their daily happiness from door to door, as beggars do their daily bread, and like them, sometimes meet with a rebuff. A mere gossip ought not to wonder if we are tired of him, seeing that we are indebted for the honor of his visit solely to the circumstance of his being tired of himself.

Mix weeds, &c: with your compost:

For the Arator.

Hills of Tallahatchie, Miss., May 5, 1857.

Mr. Editor: Our friend of "Potato Diggins" having, in December, left the field where he should have given facts and figures, and thus have carried out his improvements, and having hoisted his banner of broad assertions, traversing the wilderness with imaginary "cyphering and figuring," I concluded to follow him home, and get the facts in figures. When there called upon, he rises with "surprise," and instead of pitching into Mr. A's pig pen, and handing out the cost of every particular, giving the time and space occupied and covered, he "pitched right into" whom he supposes to be an "adversary, antagonist, satirist"! Why, friend, don't sit up things upon the knee in such a hurry. I like speed, and once came across the hills, with a negro or two, from the City of Richmond, Va., to this State, in a carry-all, in 27 days, without "casualty;" and yet took things coolly. However, mishaps as well as mistakes, sometimes occur in the best of families; therefore, I wish, again, to follow him back step by step, and see if we can't put things in better order.

Then let not these 'quibs and quirks' disturb the equilibrium of your temper, nor their transient "lustre" blind your sight; for we prefer to have facts, "figuring and cyphering," to unfounded declarations. Why accuse me of disparaging your good old State? That there is healthy territory in it, I know very well; and that it has along its eastern border about three millions of acres of level, swampy country, intersected by sluggish, muddy streams, and unhealthy, is so nearly equally true, that even you will hardly deny it, with the Census Reports in your lap. As it regards the proverbs you refer to, I can only say that if you mean that one move shall be from N. C. here & the other from here back to N. C., that perhaps one burn would not do greater injury. But I must also say that much "clear gain" is frequently made here by two moves. Now, rolling stones are sometimes useful, and though they may not gather

moss, I have known some rolling bodies to gather weight much faster than I ever knew a setting goose to fatten. "Did he speak ignorantly?" I did not. "Does he really believe that the expenses of removal will amount to only 8 dollars per negro?" I do, sir; and have experience for the foundation of my belief. Are there not numbers of families in your State who practice untiring industry and close economy to hold what they have, the only gain being the natural increase? Well, this increase can move on upon the road as well as about the old homestead. We have no guarantee against incidents and casualties in one place nor the other. But as you are near some of the most productive farms "south of Mason and Dixon's line," I will get you to hand over your balance sheet, and I will proceed with your family to see how the matter stands. You claim three months, while I give but two for removal. As you are liberal, however, in allowing one half of what the operatives make to support the little ones, I will let the time be what you want it. At the expiration, then, of three months, provided you remain about the old homestead, your operations would give you 360 dollars., and you would hand over 180 dollars for the support of the children; which leaves you 180 dollars for the support of 4 whites, "to say nothing of children." But you say that you must have 320 dollars for these whites, if upon the road, and that you adhere to your estimates. Now, the "half dime occasionally" cannot make this difference; and unless your 4 whites, to say nothing of children, are very expert at hauling out "dirt, leaves and all sorts of trash from the woods," I fear that a ducky will have to go occasionally, instead of the half dime. Your paragraph, wholly imaginary, painting our emporiums, and, indeed, our whole country, as one extended grave-yard, full of ghosts and dire disease, only reminds me of some dreams which I had heard children tell, before I left the old State. Said one and another, "I dreamt last night that I was barefooted out you-

der, and I could not put my foot down without treading upon a big black snake! I was so scared, I didn't know what to do." "Well, what did you do?" "I waked and found no snake at all." Nevertheless, there are some about, as well in North Carolina as farther South.

You accuse me of ridiculing the idea of improving your lands! That same old declaration "made easy," much more so, than to give the cost of covering a large old field with dirt, leaves and all sorts of trash from the woods. We want the figures, and expect to get them, without going to England or the North. We have a decided preference for North Carolina manufacture. You ask "how many more of your valuable citizens would I entice to the miasmatic swamps of Mississippi, to the sickly and fiery regions of the South?" Is there any "sheer gammon" in this? I will answer, however, not more than will find it to their interest to come from Sir Walter's defeat.

We have arrived now before the wall of Utica, and can but admire your effort. Come, let us try again: perhaps by some "stroke more lucky than the best" we may surmount all obstacles, triumph over every difficulty, and rejoice when the rising sun shall have dispelled the mists thereof. Then, while we will love the very spots of our birth, and remember with affection and gratitude the mothers who nursed us, we can but admire the heroism of our fathers, who gave us this heritage, bounded on by our patriotism. Come, I ask you offering neither love, gratitude, nor affection to abate, and occupy with nothing worth and intelligence this solitary tedium of ours, until the whole shall rejoice and be glad, and bloom and blossom with the rose. Mr. Editor, my friend "Edgecomb," a very modest man, does not doubt but that you have heard of the man who thanked his God that he was not as other men: therefore, I trust for the present hand him over to Jeffreys."

Yours, &c. LITTLE PLANTER.

For the Arator.

Mr. Editor: Will clover grow well on rich sandy loam? What kind of clover is best? When is the proper time for sowing, and how many seeds should be sown per acre? Is it best to sow with oats or wheat, or may it be sown without either?

Is there a kind of wheat that will do well sown in the spring? if so, where can the seed be had? Will Timothy grow on land that will make corn or wheat? How many times may Timothy be cut in the season? Will it do more than one year without resowing? Will it pay to sow for grazing? The writer has had no experience in growing either of the above articles, and desires this information to enable him to give them a trial, if thought to be advantageous. The writer is a little farmer; and he intends reducing his farm down to about half its number of acres, and manure well. He also is desirous of cultivating a variety of grains, grasses, &c. Consequently, he may be very inquisitive and somewhat troublesome.

VENIABLE.

No. Carolina, June, '57.

[We respectfully request some of our readers, who have experience touching the matters embraced in the above interrogatories, to furnish us with an answer thereto at their earliest convenience, not only for the benefit of our friend Veniable, but of many others in the State, who seek information on these subjects. The plan about to be adopted by Veniable is a wise one, and as it will, if properly executed, no doubt work advantageously, we recommend it to our farmers generally, whose farms will admit of a variety of crops. In the long run, it will be the safest, most independent and profitable method; and our people will ultimately be compelled to practice it.]—Ed. Arator.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., MAY, 1857.

Severe affliction has caused the delay in the publication of this number of the Arator, as well as the two or three preceding numbers, and is also our apology for the lack of editorial matter. We are thankful, however, that our correspondents have come to our relief in this department, and richly supplied our pages with original articles.

THE CROPS.

The corn and cotton, though small, are every where among us more promising than could have been expected, considering the backwardness of the spring.

The wheat is finer than usual, and without disaster, must yield considerably more than an average crop. The depredations of the bug, so far, have been very inconsiderable. The oats are also looking more luxuriant than usual; though they are beginning to need rain, and may be cut short by continued drought—an event much to be deprecated, since our people are looking to the coming wheat & oat harvest for supplies for man and beast, corn being scarce at \$1 30 per bushel, and fodder hardly to be secured at \$2 25 a hundred.

The list of payments for the Arator, since April, will be published in the June number.

KEEPING APPLES.

The Editor of the Homestead has received several apples from Mr. Hol-

comb, of Granby, Con., which were gathered in the fall of 1855, and hence were two years old from the blooming. They were russets, preserved in sawdust, and retained their flavor, though of a much yellower color than those of last year.

We advise our readers to water their garden vegetables with liquid manure during the drought, as often as they need moisture. If they but once give it a fair trial, we may venture to say they will never abandon the practice. A barrel in which to mix and to hold the liquid should be sunk in a convenient place near where it is to be used. The manure or guano and water should be stirred in it until thoroughly mixed, and kept well stirred while being used. If guano be used, care must be taken that it shall not be too strong. It should not be used in greater quantity than at the rate of one pound and a half to every 15 feet square, and should be made quite weak by water. It may be applied by the watering pot, either with or without the nose.

REAPING MACHIN CHALLENGE.

Baron Ward has given notice to the Imperial Agricultural Society of Vienna that he challenges all Reaping machines European and American—to compete with his, (an improvement on Hussey's, patented in October last in Austria), for one thousand florins in cutting seven acres next harvest. The trial is to take place in the Austrian dominions, and those who accept the challenge have the choice of cutting either wheat, barley, oats or clover, the prize to be awarded to the one which does the work in the shortest time, and in the best manner. This challenge has been published in the London Times. The agents of American reaping machines in Europe, we suppose, will take care of it.

We copy the following interesting article, on the subject of rotation with peas for a tobacco crop, from the March No. of the American Farmer:

ROTATION WITH PEAS FOR A TOBACCO FARM.

A subscriber at Nashville, N. C., inquires as follows: "I am at this time very much interested on the subject of a proper division of the farm, and rotation of crops, and wish your opinion on the following, viz: first year all the manure to be applied to land, to be planted in tobacco, and after the tobacco is off, sowed to wheat with guano or its equivalent. 2d year, after the wheat is off, sow it with peas at the rate of two bushels per acre, to be plowed under after the first frost. 3d year, sowed in peas broadcast to be fed first to hogs and then plowed under; and the 4th year, planted in corn and at the last working, sowed broadcast with peas, to commence again with manure for tobacco."

We say in reply to our friend, that such a rotation with the manuring he proposes, is sufficiently liberal as regards his land, and will no doubt pay him in crops, and improve the condition of his land. But we think it may be made less costly, without losing any of its benefits. First as to seed the quantity per acre for the rotation would be six bushels. It might not be an object on a North Carolina farm, to economise in this respect, but few comparatively within the range of our circulation could use this quantity of seed at less cost than six dollars. There are some advantages in using as much as two bushels of seed per acre when intended for a wheat fallow. We get more growth of stem in a limited time, and more downward growth of root, and there is comparatively little running vine to impede the ploughing. On the other hand one bushel of seed makes a good covering, runs more to vine and makes more seed, and with time enough for the crop to mature well, and for grazing in part, we should use little more than this quantity.

Then our correspondent proposes six ploughings making a great deal of extra work, and much more than farmers or planters can devote to such a purpose. We think the ploughing under of the vine should be dispensed with. Let it be well matured, and then let the stock trample it close to the surface, and the land will have the full benefit of it. We have suggested several times methods of economising labor in putting in the pea crop, which we hope our friends will now bear in mind.

We would say to our N. Carolina friend, that if his soil is not very light, and is in pretty good condition, as it must be to produce tobacco, we think he would find a crop of clover sown in February or March on his wheat, a more economical improver than the pea cover. The labor would be but a single harrowing and rolling, and the cost of seed not more than a single sowing of peas. He may still sow peas when his corn is laid by. His rotation is not objectionable. The tobacco comes well after corn, with the intervening crop of peas, and finds the ground in such a state of preparation, that it takes an early and quick growth. The tobacco crop makes a beautiful preparation for wheat; leaving the ground perfectly clean and well worked, and getting out of the way in good time for seeding.

KENTUCKY MECHANICS' INSTITUTE.

The fifth annual exhibition of the above Institute will be held in Louisville commencing on the 18 of August next. Mechanics, manufacturers, and artists from all parts of the Union are invited to exhibit their inventions and manufactures. The past exhibitions of this institution have been very successful and were managed with great ability and honorable discrimination and the next will no doubt be equally excellent. The exhibition committee consists of Geo. Ainslie, W. H. Dulaney, and W. M. Kaye, who will make every exertion to aid contributors to display their articles to advantage. Those intending to exhibit at this fair are requested to communicate with the Actuary D. McPherson, Louisville.

SMUT IN WHEAT.—Mr. Barkley of Texas, made the following successful experiment to prevent smut in his wheat. Three pecks were covered with water and suffered to remain undisturbed 24 hours. One peck of it was then rolled in hickory ashes, one peck in lime, and one peck in oak ashes, and all sown immediately. A fourth peck was sown without any preparation. The result was, land all being alike, that in ashes had no smut, that in lime only 5 heads, that without either almost entirely destroyed by it. Remember this,

THE Scientific American, TWELFTH YEAR.

ONE THOUSAND DOLLAR CASH PRIZES.

THE Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

THE SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$1; for a year, \$3. Specimen copies sent *gratis*.

Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

123 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive; which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good

and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers that he has obtained from John Kirkpatrick, Esq. of this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, that planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 1½ feet, at one dollar per package. If sent by mail, thirty cents must be added to pay postage.

SAM'L J. HINSDALE,

Fayetteville, N. C.

Jan'y 15, 1857.

12 2t

WHEAT CROP. The Charlotte Journal says: "We receive the gratifying intelligence from all directions that the wheat crop never looked better or afforded a brighter prospect for an abundant harvest. We have had delightful weather and farmers say that if it continues a week or two, the harvest will be unprecedentedly large. In view of the great scarcity of corn, this is cheering news."

THE MENAGERIE, is the title of a spirited little paper just commenced in this city, "devoted to humor, wit, fun, prices current, &c." Nathan'l M. Swank and Jas. C. Harrison, Editors & Proprietors. Terms, one dollar per annum, in advance. Success.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,



WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,
Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brands for Medicinal Purposes,
Extracts for Flavoring,
Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

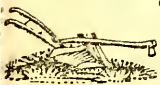
For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

FARMER'S HALL, RALEIGH, N. C.



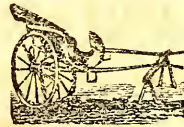
The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the

articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as JENKINS' OLD STAND, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER,
RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever introduced. It is well adapted to poor land, yielding at least three or four times as much as any of the common vicieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other. The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

PORT SMITH, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Goree, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supersede the use of every other," and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw "that pea-vine," and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.

B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says:

"If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 1½ acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

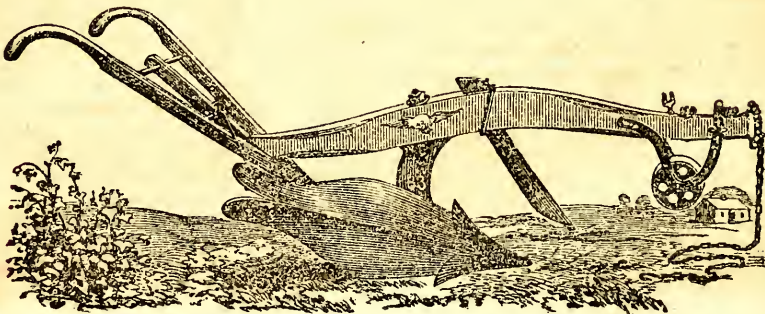
We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail.—They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

. Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount of their orders are forwarded immediately.

Feb. 57.—3m



THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. III.

RALEIGH, JUNE, 1857.

NO. 3

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, Editor & Proprietor.

TERMS.—Published on the first of every month at ONE DOLLAR A YEAR, invariably in advance.

Advertisements, not exceeding twelve lines for each and every insertion, one dollar—containing more, at the same rates.

For the Arator.

Mr. Editor: I shall have to give up my friend "Little Planter," of the Hills of Tallahatchie, Miss., as a most inveterate and hopeless case. His rejoinder, in your May number, is but another illustration of the old couplet, that "a man convinced against his will is of the same opinion still." He rails most lustily against bare assertions, and yet deals in nothing else; he prates lustily about the "figures," but takes care to keep them to himself, except in his lame attempt to show that we of the old North State can make about as much on the road as we can on our farms! he contends that ours is a sickly State, and yet gives no proof of it except that we have some flat lands and muddy streams; he wants to entice our people to leave their native and happy homes, but can offer them no better reason for such a suicidal step than that he has done so. Truly, he is like the

Fox, whose tail was cut off by a steel trap. He earnestly advised the other Foxes that it was the latest fashion, and set to persuading them all to dock their hindmost extremities, on the ground that they "had as well be out of the world as out of fashion." Our Mississippi friend is respectfully informed that the spirit of emigration has gone out of fashion in North Carolina, and that he and his associate wanderers, so far as our citizens are concerned will have to wear their short tails alone.

After all, Little Planter is no doubt a very clever fellow, and if I should ever set foot upon the hills of Tallahatchie, I shall pull the string of his latch and eat some of his hog and turnips certain. This is a bountiful and favorite old North Carolina dish, tho my Mississippi visitors assure me we live better in this good old State than the people of any other part of the Union; and, as I do not regard nor treat this lively correspondent as an "adversary" in any offensive sense, I anticipate a cordial greeting and happy interview. In the mean time, should he ever revisit the resting place of his fathers, he is invited to call, and promised a hearty welcome at Potato Diggins.

He may be as much astonished at the present appearance of "Sir Walter's Defeat," as the veritable Rip Van Winkle, when coming out of his seven years nap, was at King George's overthrow. I shall take pleasure in showing him round.

LITTLE FARMER.

June, 1857.

For the Arator.

Mr. Editor: I profess never to have received any new idea from agricultural papers, and therefore hadn't ought to trouble them with my scribblings; but by your generous indulgence I will make known a little of my experience in this my first attempt at making cotton. Well, I didn't consult your journal, but as daddy used to raise the article in small patches and as I noticed people now-o'-days planting in drills, instead of hills; so I thought I could do so too, and went to work, split my ridges, and covered, as they did, with a seraper, which put in the seed effectually two to three inches deep. Upon the top of this we had a hard, baking rain, and I thought it never would come up; but, by and by, it began to crack the crust about in places, and as I had heard some used a harrow to help it through in such a condition, I had one made with wooden teeth or pegs, which my hands run over the ridges to loosen them, but when I come to inspect the work, I was not a little vexed to find the thing was doing more harm than good. I may never if it didn't make the ground harder. The sereaks along the stiff mulatto rows looked like places in a road where children had amused themselves by dragging sticks. The cotton, however, continued to break and come up. I sided it and hoed it, as well as I could; but could never loosen the earth about it until after the rain first Monday in July. The result was, that it couldn't grow; it just stood there, dwarfing and dwarfing, until the stalks looked like small iron wire, and I wish I may die if the leaves were n't as blue as indigo. I had a very poor stand with all. But since the

rain it is coming out and coming up too; and, from present appearances, I shall get a pretty respectable stand by the commencement of picking time. Do tell me, in a letter, (for I shant know how to believe it if I see it in print in your paper,) how late it will do to make cotton after it comes up—how deep to cover—when and how to plant—how to cultivate—and how much you think I shall make to the acre. I have got a real mixture of different kinds of seeds and expect a hybridical improvement of the plant. If I succeed, I'll let you know, and get you to advertise the seed in time for the next crop. I see other folks are making by selling rare seeds, and why should not I?

Yours to command. P. FOG.

[If some of our Edgecomb planters will be kind enough to answer the inquiries of Mr. Fog, we will give it a private endorsement, to satisfy the inquirer.]—Ed. Arator.

For the Arator.

ASHES AND LIME.

Mr. Editor: Our lands may be greatly improved by lime and ashes, or by either of these articles. The lime is necessary not itself to feed the growing plants, but, by its chemical action, to prepare the vegetable and mineral substances in the soil for this office, and it should therefore be applied broadcast, to the surface, after plowing, in the fall or spring. It may be harrowed in, as the object is to mix it as thoroughly and intimately as possible with the top soil. It should never be purposefully turned under deep, as its nature is to retire from the top, and it will soon sink low enough. As to quantity to be used, that must be regulated by circumstances. Twenty-five to fifty bushels per acre, at a dose, would probably suffice in most cases. Good farmers in Maryland regard it as indispensable, and they apply it liberally with remunerative results.

Ashes, to some extent, produce the same chemical effect, and, at the same time, are rich in inherent fertilizing

properties, which they impart directly to the growing plants. For this reason, I consider ashes preferable, as a general thing, to lime, where only one of these substances is to be used. I give ashes the preference, too, because we can all procure them without cost, except of labor. If any one doubt their virtue, let him give them a trial. Lay off an acre of your poorest land, spread on it broadcast fifteen or twenty two horse loads of stable manure, turn it under; then put on, in the same way, a hundred bushels of unleached ashes, and harrow them in with wheat. Or, as soon as your crop is laid by, cover an acre thickly with brush, and let it lie twelve months: then burn it all off as it lies, and, after suitable preparation, sow it in wheat. I pledge myself the crop in either case, will pay all labor and expense; and the land will be permanently brought to life again.

But lime and ashes may be both used profitably in other modes. They are good mixed with heaps of litter and decaying vegetable matter; and greatly enrich all compost heaps, if judiciously managed. A composition of one part salt, two of shell lime, and four of well saved cow dung—handful to the hill, so as to come as near as possible without coming in direct contact with the grain—is a most excellent manure for corn and all other grain or plants. Ashes and peat or swamp muck, a bushel of the former to every four of the latter, well mixed and left in bulk a week or ten days, forms a capital compost for fruit trees, and indeed for all cultivated crops. Try these fertilizers. They are not new and untested theories, though they may be so to many of your readers, who will probably pass them over as idle chimeras, and continue to make a nubbin where they might produce a full grown ear. Even those who are convinced of their great value and importance, are far too lazy, negligent and sparing in collecting and applying them.

This ought to be—embracing all kinds of manure—a regular and systematic business on every farm. And let it here be impressed upon the reader,

that the small inefficient part of his force in other matters, might very profitably be kept at work in this department the whole year. Since I have had a few years experience in manuring, and have seen and felt its benefits in my land as well as my crops, you need not be surprised that I acknowledge myself an enthusiast on the subject.

But to carry ont the system successfully, much good judgment, personal attention and patient perseverance must be exercised. Whoever will do it, will have the satisfaction, though the process be slow, of ultimately seeing his labors well rewarded.

My motto is **EXCELSIOR.**

To the Editor of the Arator.

Sir: In the days of my boyhood, I resided in a TOBACCO country, and I have no doubt, from my knowledge of the kind of land adapted to its growth, that it may be profitably produced in many parts of Wake county. Indeed, at present prices, I believe it would pay better than any other crop. Much tobacco made in an adjoining county (Granville) and in Caswell has sold at from twenty to forty dollars a hundred; and these prices are realized by many planters in Virginia and Maryland, as well as North Carolina. In some cases seven hundred dollars are cleared to the hand, and it is very common to clear four to five hundred. Who approaches this among our cotton planters? But tobacco is a troublesome crop, and requires close attention not only in handling, but in making and applying manure; our people are averse to such trouble; and but few, therefore, if any, will try it. If it were some great grass or sorghum, or pea or potato, which promised to rid them of all this trouble, and overload their barns and store-houses, they would be eagerly running after it for a day, and then drop it as quickly, when their extravagant and unreasonable expectations are dashed, as they certainly will be. But are there not some, who will go soberly and prudently to work, and give the tobacco a trial?

It has been tried with eminent success, in Granville and Warren from the first settlement of those counties; and they are annually increasing the product. I recently heard one of the most intelligent citizens of the former remark, that with the price of even ten to fifteen dollars a hundred, he wanted to live in no better country. It is true they use guano there extensively, even, in some instances, a ton to the hand; but they manage it skilfully, and carefully save also other manures, and with the profits above stated.

If tobacco were raised here in any considerable quantities, Factories might be established among us for doing up the article; and there is no better business. Something must be done to vary and increase our productive pursuits, or our march will be backwards.

Yours truly.

R. H.

For the Arator.

Mr. Editor: The public are benefitted by the timely cautions given in our agricultural journals, as well as by the useful information and instruction with which they abound. I desire, therefore, to bring to the notice of the farmers and planters of this State, through your paper, the fact, that extensive frauds in guano are being practiced. A Farmers states, in a Virginia paper, that he purchased some of the article last fall, in Georgetown, which was liberally mixed with the red soil of Georgetown hills or some other locality, which gave the guano too red a color. In some instances, it has been found, ground plaster is moistened and mixed with it, which is difficult to detect, but may be inferred from its dampness. In one case, among a variety of rubbish, in one bag, a lump of stone coal weighing upwards of nine pounds, was found. Be vigilant. All sorts of frauds will be attempted in this article. The temptation is too great for unscrupulous humanity.

Q.

For the Arator.

Mr. Editor: Much more depends upon the careful selection of seed, espe-

ally for corn, than is generally imagined. As animals, so will vegetables degenerate or improve according to the quality of the seed by which they are propagated. All know how remarkably prolific is the Baden corn; and the only objection to it is the smallness of the ears—it having been produced from a small variety. The properties in this to be desired are, that it produces, in good ground, several ears to the stalk, and shells out better than common corn. Now, this was brought about by careful selection of seed with reference to these qualities. This principle may be universally applied, with certainty of similar results. Let the selection be made while the corn is on the stalk. Where there are two or more on a stalk, take the largest and most perfect ear. Thus gather as many as may be necessary for seed. Preserve them, in the shuck, in a dry place, until wanted for planting. In shelling, give to the hogs or crows—at all events dont plant, the imperfect grains at the end. If an earlier variety be desired, watch the field at different stages, and select the ears most forward in ripening, and mark them, so that they may be recognized when dry enough to pull. Attention to these simple rules, on the scientific principle that like produces its like, will ultimately bring out a variety that will largely increase the product of our farms; and, by liberal manuring and good culture, we shall make forty bushels to the acre, where we made only ten before. Our farmers, generally, are too careless about their seed, the result of indolence, indifference, or ignorance: All they think of, is, will it come up? Would that they could be induced to look well to the saving of their seed.

GATHERER.

For the Arator.

Mr. Editor: I see it stated that the pear will flourish on the mountain ash; the ash is a juicy and rapid grower, and brings that delicious fruit into early and thrifty bearing. If any of your readers have experience or information on this subject, I hope they will communicate

it to you for the good of the public.
M.

For the Arator.

Why should so many of our intelligent farmers despise and almost totally neglect the root crops? We of North-Carolina, I am confident, could add them profitably to our other products, and thereby add greatly to our comforts and luxuries. An acre in beets, carrots or turnips, well tilled, will produce more than a hundred dollars worth of food for man and beast. And it can easily be done, with the proper industry and attention, by any farmer of ordinary skill.

From twenty to thirty tons of Carrots can be raised to the acre, worth, where their value is known, half the marketable value of good hay, which would make 30 tons worth at least 300 dollars.

A slovenly way of raising carrots, which would suit some, is better than none. It has been tried, and resulted in producing 400 bushels to the acre. A green sod was turned in the 1st May, and the seed sowed a few days afterwards. The only cultivation was to pull up the weeds. A good plan, for this mode, would be to turn under broomsedge in the fall, plow and manure, and plant the ensuing spring.

All know that six to eight hundred bushels of Turnips can be raised to the acre.

Sixty tons of Cabbages, (which are next of kin to the root crops,) can be raised to the acre; and they make capital food for hogs and cattle. Any farmer can add an acre or so to his corn or cotton, or tobacco field, and cultivate the same with the crop, without missing the space or time employed; and if the ground is made rich, it will handsomely reward the experiment. Time may be saved by sowing the seed in rows 3 or 4 feet apart, where they are to stand Thin to a proper distance, and plow off ten.

Onions are a very saleable crop, and average 500 bushels to the acre. They never sell for less than 50 cents a bush-

el, and often they command much more. If planted early in the fall, so as to give them ample time to grow and ensure their coming off early, it would no doubt contribute to their size and soundness. Try them.

Ground Peas, wherever they will grow well and mature—and I believe they will from Wilmington to Salisbury—are unquestionably a valuable and profitable crop. They yield from 50 to 100 bushels per acre, worth one dollar a bushel, and the leavings in the field fatten the pork, while the vines winter the cows. They grow best in a sandy soil, moderately fertile, and are planted by some in February, in the hull, in small ridges, 3 feet apart, dropping one pea every two feet in the row, and covering about as deep as corn. The cultivation is similar to that of corn, taking care to keep out all grass and weeds, and throw nicely pulverized earth for the plant to bed upon, without disturbing the branches that are shooting their fruit in the ground. Let our farmers add this to their other products.

Sugar Beets are raised, measuring 30 inches in circumference, and weighing 22 lbs. I have seen a Mangel Wurzel raised in Raleigh, upwards of 20 inches long, that weighed 24 lbs. Fifty to one hundred and twenty-seven tons have been raised to the acre. Mr. Lot Pugh, of Ohio, who makes 50 tons to the acre, says it requires but little more labor than to raise 50 bushels of corn, and considers them quite as good for horses, much better for cattle, and rather better for sotch hogs. Sucking calves prefer them, when properly prepared, to milk. His Durhams, fed on beets, were fatter, smoother, and better grown than those that had been kept on other food. They are good raw, but better cooked. Mr. P's apparatus for cooking for 300 hogs, 50 cows and other stock, cost 150 dollars, and consumes a quarter of a cord of wood per day. Yet he finds it a profitable operation. The distinguished French Agriculturist Auguste de Caparin, has produced on the fourth of an acre at the

rate of 127 tons to the acre. To produce such a large crop, he says eight things are necessary, to wit: 1. Deeply trench the soil, to allow the plant to attain its utmost development. 2. Manure largely. He put 700 cubic feet of good stable manure and 300 pounds of rape-cake to the quarter of an acre. 3. Crowd the plants to not more than a foot from each other. His plants were sown in Jan'y, in a hot bed, and transplanted in April, early planting being very essential to the highest success. The volume of these beets more than doubled those sown at the regular time. The plants acquire a new concentric ring every fourteen days. 4. Irrigate the land every fourteen days, when it does not rain, using caution, as too much wet makes the beets hollow. 5. Hoe after each rain or irrigation, until the foliage is so dense as to cover the soil. 6. Trim down the flowering stem of all that seem disposed to go to seed, as they are prone to do when planted so early. 7. Remove no leaf for fodder, as it tends to arrest the development of the plant. 8. Leave the beets in the ground until the end of November, or until the course of vegetation is finished. Such is the secret of producing beets; on 120 lbs of which per day a cow will be satisfied and grow fat. But where we are so intent upon producing the commercial plants, tobacco and cotton, but few, it is feared, will be induced to raise them, though all might do so in our climate with great advantage, in the ordinary way, by which the English farmers average 30 tons to the acre, which would feed and keep fat two cows nearly a whole year. The largest amount ever known was 156 tons per acre, and the largest beet weighed 37½ lbs.

The English farmers are in the habit of planting cabbages in the fields from which summer crops have been taken.

The northern and western people are raising the root crops for stock greatly to their advantage; Daniel Webster, who was a great farmer as well as states-

man, went largely into the root crop; and why should not the farmers of No. Carolina, whose soil and climate are so well adapted to their growth, follow the example? Certain it is if we can raise them in only sufficient quantities to keep respectable stocks of cattle and hogs in good condition during winter, three important ends will be accomplished, viz. We shall be able to make an abundance of domestic manure—may improve our lands and make heavier commercial crops without spending our money for foreign fertilizers—and raise our own pork and mules.

I leave your readers to estimate the importance of such a result.

AGRICOLA.

For the Arator.

Mr. Editor: A discussion appears to be going on as to whether manure should be spread & left on the surface or turned in deep. My experience teaches me to go between these extremes. If left on the top exposed to sun and rain, the strength will be wasted, by leaching and evaporation, the opinions of certain savans to the contrary notwithstanding. If put in too deep, the rootlets of plants will not reach it, and much of its strength will sink into a subsoil which most of us will never turn up. My rule is to put it in broad cast, at a moderate depth, so that it may be thoroughly incorporated with the soil by the plow, in cultivating it. Portions of the subsoil may be thrown up in the fall, to mix in and deepen the soil in after plowings. In this way, the manure benefits the crops most, and imparts the most lasting improvement to the land. Mulching with half rotted straw or other trashy substances, is a different thing. They had better lie on the ground, as a covering, to rot, than be turned in. They keep the top of the earth light and porous, so that it rapidly takes in nitrogen from the air, and relieves the elements of the decomposing mass on its surface. This is an excellent method of improving land; but it requires time and patience.

T.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS, HER MECHANICS, HER MANUFACTURES, AND HER MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., JUNE, 1857.

REMEDY FOR THE CHINCH BUG.

We copy the subjoined paragraph from the standard, showing that the proper application of fish oil will arrest the depredation of Chinch Bugs. It conveys important information at this particular time when they are, in places, getting into the corn. We have no doubt Tobacco juice would also be an effectual remedy, and it would be cheaper and easier applied. Boil it until you have a strong decoction; then, with a watering pot, a hand could put it on almost as fast as he could walk through the field. If found efficacious, every farmer could raise a small lot of tobacco, at but little cost, which he might save and keep on hand in readiness to meet the enemy at all times and repel his invasions.

"We published recently a note from the Hon. Abram Rencher, stating that fish oil had been found an excellent remedy for the chinch bug now destroying the corn. Mr. Rencher has addressed another note on the subject, in which he says he has found the remedy entirely successful, but that some of his neighbors complain that it kills their corn. So it does his corn, says Mr. R. if applied in too large a quantity. He says. "take a feather from the wing of a chicken or goose, strip off a small piece of the little end, dip the feathery part in oil, and run it down between the boot and the stalk of the two lower blades, wipe off the oil remaining on the feather on the out side of the stalk near the ground. The oil kills the bugs at the joints, and the ballance disappear." Mr. Rencher adds: "I have just returned from my cornfield, which bordered on my wheat field for two hundred yards, and where the chinch bug appeared in great force. Their ravages were arrested by the application of the oil, and the corn looks as well at this time as if there never had been a bug upon it. However unsuccessful others may be in the application of fish oil, I consider myself indebted to it for the safety of my cornfield. I write this from fear that some persons may be discouraged by an improper application of the oil."

HOW TO CATCH CURCULIOS.

Break a hole in the side of a bottle, fill it near-

ly up to the brim with molasses and water, slightly acidulated with vinegar, cork it and hang it to a convenient central branch in the tree. One or two to each tree will ensure good fruit. Corking the mouth of the bottle prevents escape.

COTTON BLOOMS.

I. A. Dumas, Esq., of Dumas's Store, Richmond County, has sent to the Observer some cotton blooms, the first he had seen this season, gathered on the 29th of June. He adds, that "corn and cotton are unusually small and unpromising in the neighborhood. I do not think I can make over half a crop of cotton, under the most favorable circumstances. We are harvesting our wheat, the crop being very good. Oats not good."

ARTICHOKES.

The Tribune very properly contends that the great value of artichokes has never been understood generally by American farmers. They will produce a thousand bushels per acre with little or no cultivation, upon a moist rich soil, and the roots will keep undug through the winter, or they may be plowed out and wed in the fall, and hogs turned in upon the ground in the spring to root up the small roots, and this gives the land an excellent preparation for any other crop. The same root has been long grown in all the New England States in little patches, for the amusement of the pigs and the pleasure of the boys, who are fond of digging and eating it raw in early spring.

Sometimes they are used for pickles, but seldom cooked in the Northern States, while at the South they make a common dish upon many tables.

IMPORTANT FACT.

The Atlanta Intelligencer says, that in conversing with Dr. Alexander, of that city a few days ago, the Doctor stated that during the late small-pox panic, he had vaccinated over two hundred small children, and that he has found vaccination a certain and speedy cure for the whooping cough. This observation, if it is founded on a principle or fact, deserves the attention of medical men.

When climbing roses fail to run, which is often the case, the remedy is to cut away all but three or four of the strongest shoots, and permit none but these to grow the first season. Give the plant plenty of manure—liquid manure—manure of almost any kind or description. By this means you can cause your climbing roses to grow to almost any extent desired.

Pile weeds on the compost heap.

We copy the following article from our exchange paper. We believe, but are not certain, the credit due is to the American Farmer. Its views are sound, and its suggestions valuable.

COMPOSTING MANURE.

There are many opinions in regard to the propriety of composting manures, some considering it labor lost, while others think it a positive injury, and declare that all manure should be plowed under as fresh as possible, so that the land and the growing crops may have the benefit of the gasses escaping during fermentation. We shall not discuss this question at the present time; but will merely state that we think almost every farmer should have a good compost heap, and will give our reasons for this opinion, and some hints as to its formation. We cannot add to the elements of fertility by mixing manure, but we can prevent their loss, and affect both the chemical union of their elements and the mechanical properties of the mass. By a proper system of composting the farmer is enabled to save and turn to valuable account as manure, many substances which otherwise would be entirely wasted, such as decaying vegetables, turf, soap-suds and other slops from the house, peat, muck, liquid manure, &c. Those who live near cities or villages can often obtain at a cheap rate very valuable materials for enriching the compost heap, such as bone and horn shavings, woolen waste from the cloth dressers, offal from slaughter houses, and many other things which we need not mention. These materials may be composted whenever they can be obtained, and the compost heap thus becomes the store-house where every thing valuable for manure is preserved until needed for the land. It would not be convenient or even practicable to apply such materials directly to the soil, and therefore many of them would never be obtained, and others wasted. The farmer who has a compost heap, the value of which he is anxious to increase is always on the look out for some valuable material with which to enrich it. A gentleman who first paid particular attention to this matter in 1855, informs us that he was surprized at the size and value of his manure heap, even after the accumulation of only a few months. It seemed to be always on his mind, and when he saw anything in the yard, the corners of the fences, the swamp, or on the sides of the road, that he thought would add to its value if its removal was not then convenient, it was remembered until a leisure hour occurred, and was then carted to the compost heap. Composting is valuable in destroying the seeds of grass and weeds that abound in almost all manure, as well as those of the weeds which should help to swell the manure heap. If used as manure, without composting, these seeds will grow and be troublesome, and if permitted to lay around the corners of the fields, &c., they become scattered.

The compost heap is generally an agglomeration of every thing that can be raked or scraped together, and many seem to think that therefore its value depends upon its size. This is far from being the fact. It would be a waste of labor to

cart common soil to the compost heap, to be again carted to the land as the soil would gain nothing by the operation, unless made useful in retarding the too rapid fermentation of the manure, or in absorbing gasses evolved in the decomposition.—Mixing two manures together in a compost does not necessarily improve them. Indeed, the value of each may be deteriorated by the mixture. For instance, if blood, offal, &c., from the slaughter house should be composted with barn manure, a very active fermentation would take place, and the value of both be lessened. Lime we often see put into the compost heap, but if it should be mixed with a compost similar to the above, the mischief would be complete, as the nitrogen, contained in these organic substances, and the most valuable part of the manure, would be in a great measure dissipated. The rapidity with which lime dissipates ammonia may be easily tested on a small scale, by placing some moistened guano in the palm of the hand, then adding a little powdered lime and rubbing both together with the finger. The smell of ammonia will be as strong as from a bottle of hartshorn. If, instead of mixing these two strong manures [the slaughter house and barn yard] together, they had been composted separately and fresh soil, dry swamp muck burnt sods, or charcoal, using a greater portion of these materials with the animal than with the barn yard manure, decomposition would have been gradual, and most of the ammonia would have been retained. Composting would thus have been of advantage, particularly in the case of the offal, as this is too concentrated a manure to be applied directly to the land. We have seen crops destroyed by its use. The lime, too, though doing injury in the case we have presented, might be composted with advantage with any material whose decomposition it was desirable to hasten, as peat, or saw dust.

It is somewhat difficult to manage a compost in this climate in the summer. Our summers are so warm and dry that composts, if formed of materials that will decompose readily, become burnt or "FIRE-FACED," and their value almost entirely destroyed. Using a large quantity of earth or swamp muck, and salt, or some similar materials that will retard decomposition, and frequent turning and wetting is the only way we know of to prevent this, when exposed to the sun. This is laborious, and requires a large supply of water handy to the manure. Our nurserymen have a good deal of experience in managing manure, as they yearly spend large amounts of money in its purchase and preparation for the soil. Their practice, therefore, is worthy the consideration of our readers. They almost invariably compost all the manure they use. In the summer this is done under cover, and they have sheds or roofs supported on poles, for this purpose, something similar to the roofs in brick-yards, under which the bricks are dried before burning. Under these sheds the compost heaps are formed, composed of about two thirds manure and one third earth, and to these heaps are added all the refuse collected in hoeing and weeding, &c. The sides and tops of the piles are well covered with earth, and they are

forked over twice every season, so that all portions will become equally decomposed.

Some of our readers, particularly those on the fertile soils of the west, will think this is taking a good deal of trouble to obtain manure; but these must remember that with many it is NO MANURE, NO CROP. Not long since we saw on Long Island leached ashes, brought from Western New York, to be used as manure on the light lands of that Island. These ashes were transported four hundred miles, and the cost of carriage only could not have been much less than twenty-five per cents per bushel. When ashes are made use of at such a cost, and millions are annually paid for guano, a few hints on making and preserving manure, we think, will not be unprofitable.

STIRRING THE SOIL.

The following remarks by a correspondent of the Genesee Farmer, are worthy of especial attention at the present season of the year:—

I have known instances where a narrow strip has been left unbroken in a summer-fallow during a dry summer, and after harvest it was well cross-plowed together. The unbroken strip would appear almost destitute of moisture, while that which was plowed and frequently stirred with the harrow or cultivator, exhibited quite a contrast.

It is the common experience of farmers, that wheat sown in a dry fall upon the fallow-ground is much more liable to come up well than when sown on stubble.

Again, in hoing corn in very hot weather, when you could fairly see the corn grow, upon leaving the field at night I have measured some hills that were hoed and some that were not, and the next night compared their growth during the twenty-four hours. The result was that the hoed had made about twice the growth of the unhoed.

Two years ago last summer I planted rather late in the season a small piece of cucumbers for pickles. The soil was dry, sandy loam, with a warm, southern aspect. I determined to rely entirely upon frequent hoing to resist the effects of that unusually severe drought. The piece yielded a fine lot of pickles, the vines remaining green and bearing well until destroyed by the frost; while vines in the neighborhood, treated in the ordinary way, were dried up and barren. So much for facts, now how are the results to be accounted for?

Your agricultural readers have probably noticed that fresh plowed ground is frequently covered with dew, and some times with frost, when the adjoining ground is dry.

SOAKED CORN FOR HORSES.

One of the most successful and judicious farm-

ers in the vicinity of Baltimore, effects a saving of from one third to one half of his corn, by soaking it thoroughly before feeding. His method is this:—two empty vessels, hogsheds, or something similar are placed in his cellar where there is no danger from frost, and filled to the chime with ears of corn. He then pours in water, till the receptacles are filled; when well soaked, the corn is fed to the horses, and when the contents of one cask is consumed, it is again filled, and the animals fed from the other.

A BEAUTIFUL THOUGHT.

A little Swedish girl while walking with her father on a starry night, absorbed in the contemplation of the skies, being asked of what she was thinking, replied—"I was thinking if the wrong side of heaven was so glorious, what must the right side of it be?"

A western editor says that the ladies wear corsets from a feeling of instinct, having a natural love of being squeezed.

MULCHING.

There is no operation more important in the summer treatment of trees and plants than mulching. Newly planted trees will make more than double the growth when mulched than when the surface of the ground around them is exposed through the summer to the scorching rays of the sun, and the drying winds. Many trees that die the first season after they are planted might be saved by this simple treatment. With a covering of from two or four inches of old straw, hay, sawdust or tan bark a uniform moisture is kept up in the soil during summer, however dry the weather may be. The growth of the tree too, is much more healthy, and better able to withstand the severe changes of winter than when it is prematurely and suddenly checked in summer by drouth and ready for a new and vigorous fall growth as soon as rain sets in, leaving the stem and branches in the fall filled with unelaborated sap.

If this has not already been attended to it should no longer be delayed. The ground around the trees should be well hoed and broken up, and a covering of old straw or other litter at once applied.

Mulching is even more important to raspberry and blackberry plants, currant bushes, &c. This treatment issues strong vigorous stems and will give the following year double the supply of fruit that can be expected without it.—In the country where straw is abundant the entire labor of cultivation and weeding is saved by the application of four or five inches of straw over the ground between the rows of plants. The ground should have a good working between the rows with the cultivator and the straw then applied, covering the entire surface.

This is the great secret of the gardeners at Pleasant Hill in raising the ever bearing Raspberry. Their vines continue to bear in profusion from June until they are cut short by the frost in the fall.

In the culture of tomatoes, mulching will be found to produce an astonishing effect. On land not too rich a constant succession of fruit may be had through the summer. This dressing too, keeps the tomatoes from the ground and prevents rotting by which so many are lost in wet weather. If a few small brush were first laid down under the plants before the straw is applied it would be better. A hundred plants well mulched, will yield more fruit than two or three hundred cultivated in the usual way. Try it.—*Val. Farmer.*

CHILIAN CLOVER.

Our attention has been called to an article in the Patent Office Report, for 1854, on the subject of Chilian Clover, or Alfalfa. The writer of the article, a gentleman in Pennsylvania, had, it appears, received a paper of Alfalfa seed from the Patent Office. This was sown and grew, and produced in such a satisfactory manner that he imported a considerable quantity, for his own use, directly from Chili. Should any of the "farmer" readers have received the same article from the Patent Office and formed a high opinion of its merits, we shall perhaps, do them a kindness, if we tell them where and how the article may be obtained, in any quantity, and

save them the trouble and expense of importing it from South America,

The Alfalfa is not a new article, but the *Medicago sativa*, or Lucerne of France, known in England as Purple Medick grass, though often called by its French name, Lucerne. In Spain, it is called Alfalfa. There are several varieties of Lucerne, but the Alfalfa, or Chilian Clover, is the common French or English variety, bearing the same purple flowers.

This Alfalfa, or rather, Lucerne, is one of the best of forage crops. If grown, on deep, warm, rich soil, it will bear moving five or six times a year, and furnish, at each cutting, an amount equal to a good crop of red clover, and it is better relished by all kinds of stock. It is perfectly hardy, bearing equally well, the frosts of winter, or the heats and drouth of summer; roots penetrate too deeply, to be affected by mere surface changes. The Lucerne may be sown in May, either broadcast, or in drills: and if the soil is clean and good, and deeply tilled, the crop will be fit to cut for hay, or green feed in June, and every three or four weeks afterwards, through the summer and fall. The plant is perennial, and will steadily improve for a number of years, especially if supplied with plaster, which is the manure it most needs, in common with other clovers. From ten to fifteen pounds of seed are necessary to sow an acre. It may be obtained of Stair & Son, of this city. The price is usually about thirty cents per pound, or perhaps less by the quantity.—*Ohio Farmer.*

THE BEST END OF THE POTATO TO PLANT.

Some years ago, I made an experiment with a view of settling a disputed point relative to the best portion of a potato to plant, in reference to its size, and the productiveness of its yield. As the exact result has been mislaid or lost, and as I have often since heard and read assertions directly contrary to the conclusions I arrived at, I resolved to repeat the experiment.

Accordingly, last spring, I planted four rows of equal length, side by side, with two varieties of potatoes. In one row, I planted only the "seed ends," so called, or those containing the most eyes, which included about a third of the bulk of tubers, and in the next row the "stem ends," the parts of the tubers which were connected with the roots. The two varieties were the "Pink-eyes" and the "Peach blows."

The yield of the four rows was as follows:

	POUNDS.
Pink-eyes, stem ends,	217
Pink-eyes, seed ends,	179 $\frac{3}{4}$
Peach blows, stem ends,	226
Peach blows, seed ends,	189.

The potatoes raised from the stem ends were much larger than those from the others, and appeared to be from a week to ten days earlier. The result corresponded with my former experiment; and had the whole field been planted with the stem ends, the additional yield would have been more than 500 bushels to the acre.

I also planted two rows next to those named above, one with large potatoes, half a tuber to each hill, cut lengthwise, so as to divide the eyes of the tubers as nearly as possible, and in the other row small uncut potatoes, one in each hill. From the former, I dug 181 $\frac{3}{4}$ pounds, and from the latter 134 $\frac{1}{2}$ pounds. I would add that the average yield of the field was about 180 pounds to the row, and that large sized potatoes were generally used for seed, cut lengthwise, with half a tuber to each hill.—*Patent Office Report for 1855.*

The above statement is all the more interesting, for the reason that it stands directly opposed to the popular practice of the past and present.

SLUGS.

Procure a gallon or two of wheat bran, or brewer's brains, and on a mild evening just before or after a shower, place a little patch of it about your garden in all directions, especially near box edgings and similar places of retreat. About 9 o'clock at night, provi-

ded with a good lantern and candle, armed with a pot full of air slacked lime he must visit the little patches of brain in succession—he will probably be astonished at the vast number of his enemies congregated and feasting at his expense; when with his pot he can give them such a dusting as will prevent them from ever again troubling him.—If this plan be persevered in for a short time, it will effectually clear the gardens of slugs. I have applied the remedy for many years, and have never known it to fail.—*London Field.*

PARSNIPS FOR HOGS.

Parsnips appear to be nearly the only root good for swine in an uncooked state. Turn a herd of swine into a field containing field beets, rutabagas, carrots and parsnips, and the question will be very soon settled which they like best, and which consequently is the best for them—the parsnips being wholly devoured before the others are touched.

A FARMER in Germantown, N. J., claims that he makes \$7000 a year clear profit from twelve acres of land. He raises principally early vegetables for the markets, and uses about \$2000 worth of fertilizers on his land. From a patch 16 feet by 180 feet he sold \$50 worth of pie plant, this season, and can sell more from the same patch.

STEAM CULTIVATION.

Five different methods of steam plowing are now in the course of trial this season in England, and we hope the question of its economy in comparison with animal power will soon be fairly solved. It is not a question of practicability for steam plows do operate well, but hitherto their expense has been more in plowing per acre than by horses. The five systems embrace the traction engine, the stationary engine and stationary windlass, stationary engine and traveling windlass, rotary cultivator and a digging and forking steam plow.—With regard to the tract engine [which moves over the field dragging the plow,] the London "Engineer" says: A vast

amount of opposition has been advanced to the traveling of portable engines over arable land, but having got them in the field, apparently doing their work as economically as any of the other systems, and even more so. the more philosophical course is to leave the great practical question at issue to be settled at a bar of experiment."

This is a sensible advice. The traction system will yet be the one adopted, because it is the most simple.—*Scient. American.*

HOW TO CLEAN ANIMALS AND PLANTS OF VERMIN.

The Agricultor publishes a letter from M. Raspail, giving an account of a plan for destroying vermin on animals, and also trees and plants. The process he recommends is to make a solution of aloes, (one gramme of that gum to a little water,) and by means of a long brush to wash over the trunks and branches of trees, with this solution, which will speedily, he says, destroy all the vermin on them, and effectually prevent others from approaching. In order to clean sheep and animals with long hair, they must either be bathed with this solution or be well washed with it. The writer mentions several trials which he had made of the solution with the most complete success, and very strongly recommends it to general use.—*PARIS CORRESPONDENT OF MORNING ADVERTISER.*

THE VALUE OF THE CHINA TREE.

This beautiful shade tree under whose wide spreading branches the Southern people spend so much of their leisure time in the hot summer, is [says the Port Gibson Herald,] truly to them one of the greatest blessings of Providence. There is an inviting and welcome look about its refreshing shade, and we hold that man is a misanthrope indeed who loves not the china tree. But the China tree, while it is such a friend to man, is an unrelenting foe to insects and vermin.

Man has no terror about him to hold little ant in his "wild hunt after" something to eat, and in his little pleasure excursions, but in neither his hunting nor pleasure trips, nor in his aspirations for the higher life, will he climb the China tree.—

And the catapillar refuses to grace it with its handsome turnout of butterflies. The tree frog leaps from it as it would from the little urchin armed with a stick for its destruction; and those ear splitting little tormentors, the locust and the catadaya, are said to refuse to make melody in its branches.

This repulsiveness about the China tree to insects and vermin, has led some observing and thoughtful persons to experiment with it. Its branches hung about fresh meat will keep off flies. A tea made of its roots is said to be death to garden worms. The skipper fly will not trouble meat which has been smoked with the berry or wood of the tree. Fleas and bed bugs refuse to keep company with its leaves. In fact the China tree needs only the application of the inventive genius of a live Yankee to draw from it some balm for most of "ills that flesh is heir to." Truly the China tree is a great tree—the pride of the South as well as of China.

INTERESTING TO CORN PLANTERS.

A writer in a Memphis paper recommends the subjoined plan for killing crows:

Take a horse hair two inches long, tie a knot at one end, run it through a grain of corn, and throw the grains broadcast over your farms. The crow will swallow the grain—the hair sticks out at the mouth, and produces irritation and inflammation which causes the crow to commit suicide by clawing his throat for relief. This is no humbug.

HOW TO SELECT FLOUR.

1. Look at its color; if it is white, with a slightly yellowish or straw-colored tint it is a good sign. If it is very white with a bluish cast, or with black specks in it, the flour is not good. 2. Examine its adhesiveness: wet and knead a little of it between the fingers; if it works dry and elastic, it is good; if it works soft and sticky, it is poor. Flour made from spring wheat is likely to be sticky. 3. Throw a little lump of dry flour against a dry, smooth, perpendicular surface; if it falls like powder, it is bad. 4. Squeeze some of the flour in your hand; if it retains the shape given it by pressure, that too is a good sign. Flour that will stand all these tests it is safe to buy. These modes were given by old flour dealers, and we make no apology for printing them, as they pertain to a matter that concerns every body, namely, the quality of that which is the staff of life.—*Ohio Farmer.*

A friend that you buy with presents will be bought from you.

GUANO AND ITS CONSUMPTION.

It is well known to every cultivator of the soil that no land will continue productive if some equivalent for its produce be not returned to it. If the land is always yielding and never receiving, it must sooner or later become sterile. However, there are particular soils, like those of Egypt, and the low meadows of Deerfield, Mass., which, being annually overflowed, derive a valuable manure from the hand of nature, and therefore do not become barren by annual cropping. But such soils receive as well as give. There are also some soils which are not easily exhausted, in consequence (as some suppose,) of their finely comminuted particles, which attract and retain the food of plants. Such are the soils of the Scioto and Miami bottom lands of Ohio. Some of these have been annually cropped with Indian corn for sixty years, and still continue to yield heavy crops.—But such soils are exceptions to almost all others.

If all the manure derived from the produce of a given field for a series of years, could be annually returned to it, possibly its fertility would be kept up. But such a contingency, even under the most careful management, is out of the question. We know of numerous instances, where the hay, straw and corn fodder derived from 30 or 40 acres of land, only furnish manure annually for about two acres of hoed crops. Such facts show there is a lack of skill, and want of economy and enterprise on the part of such farmers, and every few years find their crops less, and less, and the number of their farm stock smaller and smaller, and without a radical improvement in these matters, this diminishing process will go on till thousands of farms will be occupied as pasture land, and poor at that. Under the most skillful management now practiced, there is but a small proportion of the farms in New England that can retain their fertility, from the manurial resources of the farm alone. The farm management in England is vastly superior to that of this country, yet with all their skill in the management and application of their farm yard manures, the British farmers find it necessary to purchase annually millions of dollars worth of foreign manures—such of guano, bones, nitrates, rape and linseed cake, &c., &c., in order to obtain remunerating crops.

The importation of guano commenced in 1840—in 1841 there were but 1,733 tons imported.—In 1845, there were imported 220,934 tons, employing a fleet of 683 vessels, and 11,486 men.—This quantity must have sufficed to manure between two and three millions of acres. The price

of guano there, was \$10 10s, or about \$52 per ton. The importation and price have both been largely increased since 1845. Messrs Gibbs & Sons have the monopoly of the commodity, and can raise or lower the price of the article as they see fit; they have advanced the price. Recently they have added \$2 per ton—being \$13 a ton for thirty tons and upwards, and \$14 5s. for all quantities under that amount. At this price in quantities less than thirty tons, it will cost the English farmer about \$75 per ton at the place of purchase; over that amount, about \$86. In 1855 the importation of guano into the United Kingdom, amounted to 395,061 tons. This, at \$70 per ton, makes the grand sum of \$21,354,270 paid out by the British farmers for this one kind of manure.


On the 24th of December, 1856, the Messrs. Gibbs, by a circular, notified that the prices of Peruvian guano had advanced \$2 per ton; supposing their imports for the year are the same as those of 1855, the increased charge would amount to over \$600,000, or over \$3,000,000. How this movement is to affect the “bread and beef eaters” of England, is yet to be seen.

From July 1st, 1854, to June 30th 1856, there were imported into the United States, 220,707 tons of guano of all kinds; exported, 69,583 tons, leaving for home use, 170,124 tons. This at \$50 per would amount to \$3,606,200. But as a large portion of the guano was other than Peruvian, and sells for much less price, perhaps the American farmers have not actually paid out more than from five to six million in the two past years for guano; whether the increased products of the land have been equivalent to the cost of the guano is a question that admits of some doubt. With us we have been satisfied that good Peruvian guano has paid a fair profit on the wheat and potato crop—on many others, it has been of little value, apparently,—*Country Gentleman*.

SPRING WHEAT.

In answer to a correspondent, we state, that the best variety of spring wheat is probably the Canada Club Wheat. We learn from the New England Farmer that it is a rapidly growing variety, is hardy, and is frequently sowed in Canada as late as the first of June.

Several cargoes of new Wheat have been sold in Norfolk at \$1 80 for red and 1 85 for white.

 We have been prevented by the force of circumstances—the strongest power on earth—from issuing our monthly numbers regularly, at the proper time, for several months, and now, though late in July, we are just bringing out the June number of the Arator. If, however, our subscribers will continue to exercise patience, they shall receive all the numbers due them, or their value in cash, should the publication be discontinued before the end of the year.


WARTS ON CATTLE.

It is said the application of strong beef brine will remove warts from cattle. Keep them in the sun, and rub it on well as often as it dries, for two or three days.

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.


The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

 I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

 The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers

that he has obtained from John Kirkpatrick, Esq. of this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, the planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 1½ feet, at one dollar per package. If sent by mail, thirty cents must be added to pay postage.

SAM'L J. HINSDALE,

Fayetteville, N. C.

Jan'y 15, 1857.

12 2t


Scientific American,

ONE THOUSAND DOLLAR CASH PRIZES.


The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.


\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857.  Here are fine chances to secure cash prizes.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with several hundred original engravings.

 TERMS.—Single Subscriptions, \$2 a year or \$1 for six months. Five copies, for six months \$4; for a year, \$8. Specimen copies sent gratis. Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

123 Fulton Street, New York.

 Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALER IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,

Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps.

Fine Tooth and Hair Brushes, Paint Brushes.

SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,

Snuffs, Manufactured Tobacco,

The Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandies for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.
Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-ff.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
the horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to sowing, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-4ff.

FARMER'S HALL, RALEIGH, N. C.

The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the

articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
railroad.

There is also a new fire proof Ware House on the
corner, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Mills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as **JENKINS' OLD STAND**, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-4ff

W. L. POMEROY, PUBLISHER.

BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including Records for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever produced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other. The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

Fort Smith, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Gorce, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supercede the use of every other," and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw 'that pea-vine,' and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.
B. W. LEE.

South Bend, Arkansas, September 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says: "If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 1 1/2 acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail. They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

. Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount of their orders are forwarded immediately.

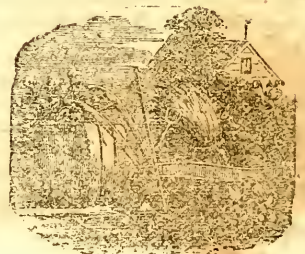
Feb. 57.—3m's

PAYMENTS for the ARATOR SINCE APRIL NO.

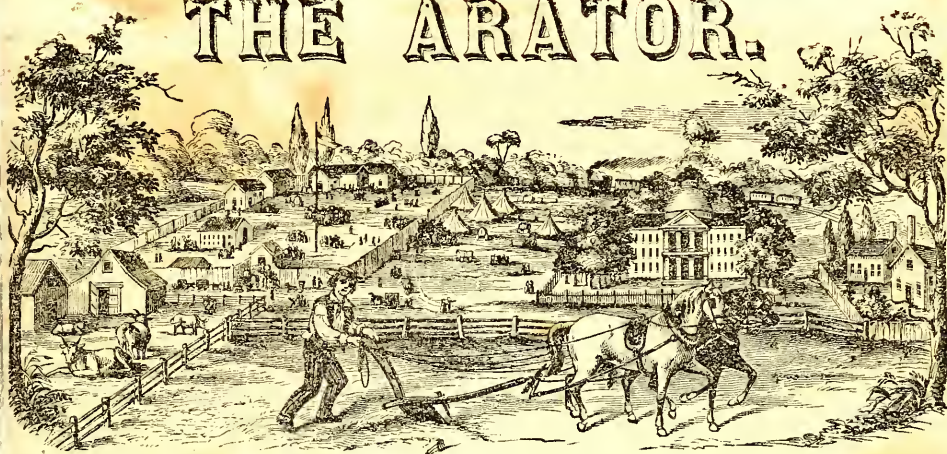
Dr. H C Ennis, James Todd, Solomon Pace, Dr. Willie M Person, John M Vannoy, Hon. Saml Person, S D Beves, D Johnson, A Costen, Jas F McNeily, J M Patrick, S E Johnson, N W Cooper, Thomas M Scott, Aaron Nealy, Harw'd H Wiggins, and Dr. Richard Haywood, one dollar each.

James Davis, three: Joel Wells and J S Leathers, two each. L W Umstead, \$1 25.

Other payments have been made, for which special receipts were given.



THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

VOL. III.

RALEIGH, JULY, 1857.

NO. 4

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, Editor & Proprietor.

TERMS.—Published on the first of every month
ONE DOLLAR A YEAR, *invariably in advance.*

Advertisements, not exceeding twelve lines
for each and every insertion, one dollar—containing
more, at the same rates.

For the Arator.

Mr. Editor: I am pleased with the suggestions of your correspondent "T." in the June number, on the subject of surface manuring and mulching or covering the surface with half rotted straw or litter. He has a just conception of the folly of scattering manure thinly, and leaving it on the surface to be wasted by the scorching sun and drenching rains, which will be the result unless it is on an inch or two thick, so as to cover the earth deep enough to keep it moist and mellow. None of us can use manure enough for this method. Our only plan of realizing the value of the limited quantities which we make, is to cover it with the plow. What is the reason our cowpens are poor unless the manure is turned under? and why is it so essential to the best effect of guano that it be put in pretty snugly beneath the surface? It is not pretended that other manures are as volatile and

wasteful as guano, but they all possess, more or less, the same fertilizing element, which is more gradually, but nevertheless with equal certainty, disengaged, and if there be no rootlet or soil to receive and appropriate its virtues, it takes its flight, like the ammonia of the guano, on the wings of the wind. The doctrine, that the moment manure is spread out, decomposition ceases, and with it the evolution of ammonia, may be theory, but it is not experience. These processes are thus unquestionably checked, but not arrested: The particles coming in contact with the moist earth, continue gradually to decay, and part from their ammonia, which, like sparks, is prone to fly upwards; imparting comparatively little benefit to the soil.

But this is not the case in mulching, or heavy surface covering with half rotted materials. This has a threefold beneficial effect: 1st. The thick mass of litter will retain sufficient moisture and stagnant air to cause it to rot and deposit its "residue of putrefaction" on the land, the dense covering on top fixing the ammonia as a part of that residue. "A Virginia Farmer," in the June number of the American Farmer ad-

vances this idea in part. He says: "the residue of putrefaction is the only pabulum of plants—the only substance which should be called manure. Take any substance capable of decomposition, cover it from the rays of the sun, place it in a damp position, and in a still atmosphere, and you will soon find it changing its character, its appearance, and in most cases giving off an offensive smell: in other words, it is rotting. Long litter manure intrinsically becomes more valuable in undergoing this process. Wood will rot sooner in this position than in any other, the hardest brick will crumble and fall to pieces."

2. It will keep the ground moist and permeable to the heavy air, charged with nitrogen, that settles under the covering, which will carry, with its own fertilizing property, the rich gases of the decomposing mass, and mix them with the soil, contributing essentially and permanently to its improvement. 3. By preserving a constant moisture, it hastens the disintegration of the mineral substances and the decomposition of the humus in the soil, by which the earth enriches itself: The writer to whom I have alluded hits the nail on the head when he says, the soil thus treated will "become the food of plants, its colour will be changed, and it will have the appearance as if it indeed had undergone a rotting process." "It is indeed a great fact, [that the covering of soil will improve it], and a glorious one for the practical farmer, worth more to him than forty chapters from Liebig or ten scientific lectures. Let him, then, cover his soil with any thing that is cheap and ready to his hand, and my experience and my word for it, he will find it greatly enriched, and more permanently than by a heavy application of barn yard manure." The same writer continues: "Admit that covering or shading will enrich the soil, and that is all the practical farmer need know. Teach our farmers then to sow clover; to manure upon the surface—[to this I object, as a general thing, for the reasons given above]; to spread their straw

on the barren places in their fields, or where the clover is thinly taken, instead of rotting it in the barn yard or leaving it to waste away in the ricks: to spread or cover, in fact, with any thing which they may have suitable for the purpose; and I verily believe science need labor no more to find out mineral manures for exhausted soils." If this be true, and I believe it is—if it be but half true, then have all the farmers of North Carolina the means at home for bringing their farms into a high state of fertility, and then does this matter rise in magnitude and importance to them above every thing else touching the means and modes of improvement. This plan, I well remember, was clearly set forth and warmly recommended by you, Mr. Editor, some years ago, in your then agricultural journal, the *No. Carolina Farmer*, and I have been pleased to see you have repeatedly urged it in the *Arator*. But how many of our farmers have tried it? Why have they slighted such excellent advice? Just because it was simple and within every body's power. Had it been some grand mystery, foreign compound, or artful humbug, all the world, with the furious speed of this fast age, would have been running after it. The principle that operated upon Naman some 3 or 4 thousand years ago, still exists among men: If the Prophet had bid him do some great thing, would he not have done it?

A Va. Farmer assures us that everlands found to be destitute of necessary mineral substances, will, closely and properly covered, in twelve months be greatly enriched; and I will tell him how the necessary mineral constituent gets there to produce the improvement: from the combination of gases evolved and kept from escaping during the process of decomposition of the earth and the substance by which it is covered.

But the result is the main thing. Let our people try it. Every one can make an experiment without the cost of one red cent, and without any excessive labor. Yours, &c. JEFFREYS.

July, 1857.

Caledonia, Moore Co., N. C. July, '57

Mr. Arator: I send you some Recipes below, which you can publish if you think proper.

For removing Tan Blotches, Freckles and for improving the Complexion, &c.
1. Take strong soap suds 2-gal. add 1 pt. pure alcohol, $\frac{1}{4}$ oz. rosemary: mix them well together, and it is ready for use. Should be applied with a linen rag.

2. A healthful, cheap and agreeable Drink for Summer—Dr. Duval's Medicated Lemonade.—White sugar 1 lb., tartaric acid $\frac{1}{4}$ oz., essence of lemon 30 drops, water 3 quarts: mix.

3. To make Silver Fluid for silvering Brass and Copper Articles of every description.—Take 1 oz. precipitated silver, to half an ounce of cinate of potash and quarter of an ounce hiposulphate of soda; put all into a quart of water: add a little whitening; shake before using. Apply with a soft rag.

4. Vegetable Salve good for old sores. Take of lard 1 lb., rosin $\frac{1}{2}$ oz., and 10 oz. elder bark, boil over a slow fire for half an hour, then strain and put into boxes—an invaluable remedy.

5. Composition to render Leather Water-proof.—Boiled Oil 16 parts, spts turpentine two parts, beeswax one part, Venice turpentine two parts, rosin one part; mix and use while hot.

6. Furniture Varnish.—White lead 15 oz. yellow rosin 1 oz. powdered, turpentine 1 qt. Simmer till dissolved; apply with a cloth; well polish with a piece of woollen.

7. Solder for Steel Joints.—Take of fine silver 19 dwts, copper 1 do., brass 2 do. melt under a coat of charcoal lust. This is the best solder for steel.

8. Welding Powder for Iron & Steel. Melt Borax in an earthen vessel, add one-tenth part sal ammoniac pounded fine: when well mixed, pour it on a cold iron plate: as soon as it is cold, pulverize and mix with an equal quantity of unslaked lime: heat the metal red hot, then strew the powder over it. The pieces of metal are again put into

the fire and raised to a heat considerably lower than the usual welding one, when it is to be withdrawn and well beaten with a hammer.

To the Editor of the Arator.

Since you seen fit to print my other letter, and promised to write to me when you heard from Edgecomb, and ha'n't written, I calkilate you have a genuine fellow feeling for me, but ha'n't heard from any of your Edgecomb friends yet. Well, I suppose, like the rest of us, they have been up to their eyebrows in business with their crops. I tell you, since the rainy season set in, my cotton has come out amazingly, and so has the grass, and we've had to scuffle—being well high lost in wonder, work and weeds. If it be true, as Washington says, he who makes two blades of grass grow where only one grew before, is worth more than all the brawling politicians put together, then I may claim the premium for me and my farm, at the next State Fair, if it is to be held; of which people down here have long been expecting due notice to be given. But, as I was about to tell you, my cotton has changed color two or three times; first it got out of the blues, and put on for a time a pretty lively green, but the rain poured down and the grass sprung up at such a pitch, that I concluded to turn it under while the ground was sticky: so we set to and welloped it up, and then the whole patch took the yellows: and after supper, one night, says I to Betty confound this cotton, if you ever catch me trying to make it again, you may send me right off to Dix Hill. But says she, honey, live in hopes, if you die in despair—may be you'll raise enough to make you a shirt yet; and she looked so quizical at me, that I said not another word, for fear I might say something I ought not to. But the color is changing again, the prospect is brightening, and I begin to lay the flattering ointment to my heart, as cousin Rattle Jack used to say, that a few bags, marked, in large letters, P F, will yet take the eye

ofold Petersburg. Be that as it may, I can measure sugar cane with the best of my neighbors. It stands 3 feet apart, that is, the rows, thick as English peas, and full twelve feet high. Neighbor Bombast came over and commenced boasting like: Said he, the panicles of my sorghum *saccharatum* have shot clear, and the inflorescence of the multiplied peduncles promises an early maturation. I took the 'Squire by the arm, led him to the door, and pointing to my blooming wilderness of cane, says I, look at that—some of the heads are getting out of the dough state, and it will all soon be ripe. It quiled him. Turning round and taking his seat, says he Mr. Fog, how's your cotton? Says I, people say it's about a match for your Chinese sugar cane, and both, like the tinea feet of the Chinese women, were pinch'd too tight while young. We then shut up, and dropped the subject. I hear some one has made a spoonful of syrup, and predicts that the State will soon be groaning with sugar-mills and swimming in molases. We need'nt be surprised: for I wrung a joint of my cane in my hands, and the juice poured out so, that Jo says he, look a there, daddy, I aint here if it dont run down like water. Large streams, as our school-master used to say, from little fountains flow. I have just sot in to make manure; for if I continue to raise the cane it's my opinion I shall need it. Such a rank grower must be a hearty feeder and great exhauster; and it abounds too in mineral substances, and especially fox-fire acid, which they say can't be extracted by plants from the atmosphere. These must therefore come from the earth; and when a crop takes them away, I begin to think it reasonable we should do something to put them back. I shall, then, as Shakspeare says, proceed to pile the rank weeds on the compost. But as I do n't know how to fix it for the best, I wish you would get one of your experienced Edgecomb friends to drop me a line and let me know all about it.

P. S. My hopes are all dashed again—dashed to the ground. My beautiful

patch of cane, that stopped the 'Squire's boasting, is flat upon the ground. There came a fall of wind with the rain on Monday, that struck it as if it had a spite against it, and there it lies hugging the earth like an iron roller had passed over it. One misfortune, as Paddy says, rarely comes alone. Thus has it been from childhood's hour—as the poet says—I never dropped a piece of bread but it was sure to fall plump on the buttered side. But I must submit to fortune, whose power is confessed only by the miserable; the happy ascribe their success to prudence and merit. We should strive against the spirit of murmuring; since complaint is the largest tribute Heaven receives, and the sincerest part of our devotion.

I am still your servt. P. FOG.

AN EDITOR TURNED SHEPHERD.—Kendall of the *New Orleans Pecayune*, is now located with his family about five miles New Braunfels in Texas, where he has gone largely into the raising of sheep. He is said to have the finest Merinos, from the best stock on the Eastern continent.

A WARNING—COWS POISONED BY WILD CHERRY.

The *Ohio Farmer* reports that a man, having occasion to cut down a small wild cherry tree, threw the branches over the fence into the road or common, and that two cows, after eating the leaves, died within twenty minutes, and within fifty feet of the place. That Prussic acid is contained in the leaves, &c., of this tree, we were aware; but did not suppose it existed in sufficient quantity to produce such effects. The public would be benefited if every circumstance connected with this case, which tends to show that death was produced by the cherry leaves and nothing else, were more fully stated; also, if any one who knows of any facts of a similar nature would give them publicity. Meanwhile, a prudent caution seems to dictate that care be taken to prevent cattle from browsing upon the brush of this tree.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS,
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., JULY, 1857.

SURE WAY TO IMPROVE LAND.

We invite the attention of the reader to the communication of "Jeffreys," in this number of the Arator, on a subject of the highest importance to every owner of the soil—a cheap, easy and certain method of its improvement. He recommends surface covering, a plan which we have long believed to be feasible and efficacious in the renovation of our worn and wasted lands, and which we have often suggested for the consideration of the public. We are glad it is again introduced to public notice, with reasons that will command respectful attention. This is a very favorable season for consideration and action on the subject. Now that the crops are laid by, let every farmer employ his force in making an experiment for himself on one or more acres of poor land. Let the whole surface be covered closely an inch or two deep with half rotted or even fresh materials of some sort, straw, pine or oak leaves, or any trashy substance; topping the whole with the green branches of trees and brushy undergrowth. Let it remain in this condition until the Spring of 1859, which will be little more than a year and a half; then burn off the rubbish and put the land in cultivation. It will pay the first crop, and show the improvement for twenty years.

GUANO.

We learn from the Baltimore American that a supply of Peruvian Guano

is expected soon, independent of the Barredas. According to late intelligence from Peru, "the revolutionists are selling guano at 12 to 20 dollars per ton, and having possession of the islands are loading some eight vessels with all dispatch. Some 5 to 6000 tons had already been shipped, and as fast as vessels could be obtained, they would be loaded for this country, and are expected here in time for fall seeding of wheat. By this means, the price will be greatly reduced, and the judicious use of guano become profitable to all who are engaged in agricultural pursuits; and, the Farmer thinks, by use of the phosphatic guanos mixed with the Peruvian, and by a more general introduction of the guano attachment to the wheat drill, a saving of two thirds of the Peruvian guano may probably be secured, and an equal effect realized in the immediate crop to which it is applied to that obtained by broadcasting heretofore, when two to three hundred pounds were sown.

It is said that a few tons of the guano from the islands of the American Guano Company, in the Pacific, have been received, and will be placed in the hands of agriculturists by the Patent Office, for experiment; and that 100 tons are on the way in another vessel. The July number of the American Farmer publishes the analysis of four samples of this guano, from which that paper regrets to say it has little expectation of its competing with the Peruvian.

The Colombian Guano has been tried with very favorable results, and the Editors of the Am. Farmer have reason, in their own experience, to be much pleased with it, especially as to the permanency of its action. Mr. Brown, of

Prince George's county, estimates its effects upon corn and wheat as superior to Peruvian. Have any of the North Carolina Farmers ever tried it? If so, will they communicate the result for the public good?

MULCHING TESTED.

We have elsewhere directed attention to the communication recommending mulching as a mode of improving land, and, as far as practicable, of raising crops. We have since observed a communication in the Tennessee Farmer, stating that the writer tried it last year on corn with the most satisfactory result: He planted a small piece of poor ground, after having first broken it up well. The rows three feet apart; the stalks about one foot apart in the drill. When the corn had about four blades, the young grass completely covered the ground, and the corn was turning yellow. He spread a small quantity of stable manure around the corn, and covered the whole ground 3 or 4 inches deep with leaves from the forest, taking care to do this when the ground was wet, and the leaves also, leaving the tops of the young corn uncovered. In ten days, there was not a particle of living grass to be found, and the corn had put on that deep green which always denotes a healthy condition. From the day of planting, nothing more was done to the corn; and the result was a product at the rate of forty-two bushels to the acre.

In the course of the summer, the following facts were noted: First, the corn treated thus was always ahead of some planted alongside of it, and cultivated in the usual way. Second. It ripened at least ten days sooner than other corn planted at the same time. The hottest

and driest days the blades never twisted up, as did other corn in the neighborhood. Fourth. In the driest weather, on removing the leaves, the ground was found to be moist to the surface, and loose as deep as it had been first broken up. Fifth. The heaviest rains had scarcely any effect in washing away the soil or making it hard.

The Soil of the South illustrates the advantage of covering the ground, in the remark that "the native forests mulch themselves, and we see how rank and vigorous they grow. Those who mulch properly actually save time and labor, for when it is well done, the labor is done for the year, and the soil is all the time being enriched, as the plant grows and perfects itself. Therefore we say to the orchardist, mulch around your fruit trees; to the vine grower, mulch around the grape vines; to the gardener, mulch among the vegetables; to our fair lady florists, mulch among the flowers;" and to the farmers, try mulching among the corn.

THE CROPS.

The crops of wheat have been perhaps a third larger in this State than ever known before. Oats and Irish potatoes good in some places—sorry in others. Corn promises an unusually abundant crop—the rains having been frequent and plentiful from about the first of July to the first week in August. The Sugar Cane is flourishing, and an experiment, on a small scale, has been made by Mr. Richard H. Smith, of Halifax, in making syrup from cane the growth of the present season, which satisfies him that "the day is not distant when the sugar-mill will be as common with our people as the cider-mill was years ago—when every family will make

their own molases—and the children—white and black—will eat bread and molases, and drink switchel to their heart's content." From three unripe joints of the cane, Mr. S. extracted about one gill of juice, from which, after boiling half an hour, he says, "a table spoonful of very good molases was obtained—superior to the common grades of molases."

Cotton, though backward, is growing rapidly under the influence of the constant rains; but too large a proportion of weed is dreaded by planters.

IMPORTANCE OF ATTENTION TO THE BREEDING OF STOCK.—The Gardeners' Chronicle, London, gives some excellent advice, through a correspondent, Willoughby Wood, on this subject. It is equally important in America as in Great Britain. The points insisted on are: 1st, The propriety of using none but a pure bred bull to improve a herd: 2d, The stock to be liberally kept during the first year. "Bad breeding and early starvation, are the two main causes of deterioration among stock, and ought to be abandoned, along with undrained land, foul crops and crooked fences, as relics of an age less enlightened than the present."

The contrast between good and bad management in breeding cattle is thus graphically urged by Mr. Wood.

"He who wishes to lose by breeding," says Mr. Wood, "has only to follow the example of Mr. Thriftless, who buys at hazard any animals he may see at market, being guided solely by their *nominal* cheapness. He disregards the indications of breed, and pays no attention to uniformity of character, providing he has to pay a trifle extra for the qualities. Health and strength of constitu-

tion he considers as utterly unworthy of notice. When he has got together a heterogeneous assemblage of cows of all breeds and crosses, the next step is to find a bull. Here again, cheapness being the main consideration, he takes the first male animal which a neighbor offers him. He makes no inquiry as to pedigree, because 'he is not one of your fancy breeders.' For a similar reason, he is contented to overlook the most glaring defects of shape, and the fatal absence of quality. He deludes himself with the idea that the worthless mongrel is *cheap*, whereas, in reality, he is dear at any price.

"Thus does Mr Thriftless glide down the easy slope of ignorance and indolence, until after the lapse of years, he finds, to his astonishment, that no entreaties will induce customers to buy his weedy, raw-boned mongrels, while they are eagerly contending for the thriving stock of his neighbor, Mr. Thoughtful, who has pursued a course in every respect the opposite to that which has entailed such heavy loss upon him.

"Mr. Thoughtful had a few good cows, of the ordinary Short Horn breed, on his farm, which he considered as well adapted for producing stock as they had proved themselves for filling the milk pail—having discarded all which did not answer to this description, he neglected no opportunity of filling their places with others of a similar character, and thought little of giving a couple of pounds or so, over the market price for such as come up to his standard. But while he deemed liberality to be sound policy, whenever he recognized superior shape, high quality, and superior blood, he carefully avoided paying extra for mere condition, which was the result of high keep—for

he possessed that rarest and most money-making of all qualifications, the power of discerning merit in an animal when out of condition.

"As regards his bull, Mr. Thoughtful actually had the extravagance to give a celebrated breeder 20 guineas for him at a week old. His reasons for committing this piece of folly, as it was regarded by Mr. Thriftless and his school, are, perhaps, not unworthy of consideration. In the first place, he knew the dam not only as the possessor of a high pedigree, but as one of the finest cows and best mothers in the country. He had seen former calves of hers grow up to fetch enormous prices. He was aware that his sire had cost 300 guineas, and that his stock proved him to be worth it. And he well knew, too, that if he waited until this calf was a year old, there would be no chance of his obtaining him for a sum within his means. He, therefore, deemed himself most fortunate that his offer, made before the calf was born, had been accepted, for he had thus become the owner of one of the best bred bulls in the neighborhood at what he rightly deemed a very low price.

"Disregarding the offers which flowed upon him to part with the young animal, for which he even refused to name a price, he was in due course rewarded by witnessing the annual arrival of a healthy, even, handsome, lot of calves, from which he selects the healthiest and most promising to rear. Having an object in view, he keeps it steadily before him, turning neither to the right hand nor the left till he has attained it; and, therefore, declines the most tempting offers for his young stock. At last, the long-looked for day of his sale of his heifers arrives. The concourse of buy-

ers is numerous and influential, and the competition which ensues is such as had never before been witnessed in that neighborhood. His cows are well known as milkers, while the heifers are not only by Herd book Bull, but are in calf to another of equal value. His name is now established; he has by common consent achieved a success, henceforth all is plain sailing before him."

The same judicious course pursued with Devon, Hereford, Ayrshire and Alderney cattle, produces a like result.

RAISING YOUNG STOCK.

We of North Carolina are yet in the rudiments of this department of husbandry. It is an important one, and we should endeavor to advance in it *pari passu* with all other branches. A knowledge of the most successful method of others will, therefore, be interesting and profitable, though we may not adopt it, as it may materially aid in chalking out one of our own. For this reason we devote this space to giving the plan of a New-Englander, which he has found to work well. It is, in substance, as follows, as given in the New England Farmer: Calves should mature with a constant growth. When young, they should be permitted to suck the cow until they are six or eight weeks old; then commence with new milk for a week or more, until they get well to drinking; then begin with skimmed milk, and add a little meal, together with a small portion of salt. After they are ten or twelve weeks old, increase the quantity of meal, and lessen that of milk; and from sweet milk, add slops, sour milk, or even whey, until there is a sufficient quantity of fresh food to supply their immediate wants. This method weans

excellent condition. When taken to the barn for wintering, they should have little extra food, daily, such as a few pebbins, oats, carrots, or potatoes. In eighteen months, if well fed, they will be nearly as large as their dams. The first year's growth of the animal is far the most important in rearing neat stock.

HOW TO DESTROY CATERPILLARS.

Take the boys' fire cracker and put it at the end of a split stick or pole, light it, and allow it to explode beneath or in the nest of the destructive vermin—their very best use that can be made of that kind of terror of the nervous.


HOW TO DESTROY CHINCH BUGS.

The Hillsborough Recorder states that a farmer in that vicinity has used strong soap suds, with complete success, in destroying chinch bugs.


REMEDY FOR BURNS.

The American Cotton Planter gives the following: Take common soot and any kind of grease in which there is no water, such as butter or hog's lard; make an ointment by mixing together, spread it over the burn or scald, and lay a linen cloth over it.

ANOTHER.—It is said the white of an egg has proved of late the most efficacious remedy for burns. Seven or eight successive applications of this substance soothe the pain and effectually exclude the burned parts from the air. This simple remedy seems to us far preferable to collodion or even cotton.

 We stepped into the Carriage of Mr. B J Perkinson, of this city, a few days ago, and were pleased to see, among other evidences of his skill and industry, a number of fashionable bug-

gies, put up in a beautiful and substantial manner, all ready for market; and, what, though less fanciful, is of greater importance, we learned from him that he would promptly supply our farmers with any number of the most approved manure carts that may be wanted. To use these homely but more useful vehicles, we would say to one and all, "now 's the day and now 's the hour."

 Mr. Albert Johnston, of this city, a skilful machinist, has constructed a neat little hand mill, with wooden rollers five or six inches in diameter, with which to extract the juice from the sugar cane. We saw it operate a few days ago. A man can turn it with ease; and with a hand to feed, it will extract sixty gallons a day. One with iron rollers, upon this model, might be made so cheap as to suit all who design nothing more than to make their own table molasses; and we hope Messrs. Burns & Co. will take hold and bring it out at once. Mr. Johnson simply intended his for an experiment, and we saw a specimen of some very rich syrup which he made with the aid of it, from a gallon of juice, three or four days in advance of the experiment made by Mr. Smith, of Halifax. Three gills, boiled down thick as honey, was the product of the gallon, taken from ten unripe stalks.

SUN STROKE.—This is the season for *coup de soleil*, or sun stroke. A cotemporary recommends to laborers in the sun the employment of course palm-leaf hats, with a moist sponge in the top.—We believe that very nearly as efficient protection may be obtained by filling the top of the hat with cotton, as is practiced in some localities. It has been affirmed that no one was ever known to be affected with these fits who wore a thick bag of cotton over his head. A remedy so simple deserves to be generally known. [Scientific American.]

HOME INDUSTRY.

Mrs. S., of Mansfield, says the Boston Transcript, a quarter of a century ago, in six months from the first of March, earned \$85 by making straw hats for wives and daughters who do not know how to make bonnets, and received the cash; and shirt for a husband or a brother. Besides this she took care of her family a divorce case was scarcely heard of. of young children, doing the cooking, At a recent Court in Worcester county washing, milking two cows, making the butter for family use, taking care of a hog, the chickens, &c., all during the absence of her husband, whose business required his temporary residence in another State.

Times and customs, it will be observed, have materially changed, whether for the better or worse let the reader judge.

Another instance of a wife not many miles from Boston, during the absence of her husband to fulfill a railroad contract, who by her skill and industry paid all the bills of the family expenses, domestic, and had a surplus to add to his lucrative gains on the contract.

By palm-leaf braiding, in Massachusetts, another wife supported the family, besides doing the housework, leaving the whole earnings of her husband's labor to go toward paying for their farm, for which they were in debt.

And another still, with the assistance of a girl about 18, did the cooking, washing and mending for a dozen or more laborers, and took care of the milk of 30 cows.

Similar instances of by-gone days, of not very ancient times, might be greatly multiplied, to show that our mothers and grandmothers were patterns of industry, worthy of being imitated by the wives and daughters of the present age. But fashions and customs change. Then it was respectable to be skilful in all the domestic arts. Now it is boast-worthy to be ignorant of all these things. Then the cloth of which much of the domestic apparel was made.

product of the hand-loom. The flax and the wool were the product of the farm, and the cloth of domestic industry. Now there are wives and daughters who do not know how to make bonnets, and received the cash; and shirt for a husband or a brother. Besides this she took care of her family a divorce case was scarcely heard of. of young children, doing the cooking, At a recent Court in Worcester county washing, milking two cows, making the butter for family use, taking care of a hog, the chickens, &c., all during the absence of her husband, whose business required his temporary residence in another State.

One thing, however, is certain; our grandmothers could make better bread of corn and rye than their granddaughters, with the aid of an Irish domestic, can of good Genesee wheat. This ought not so to be, but sour, pell-melled, saleratus-scented, stained stuff called bread, demonstrates that however skilfully the wife may thumb the piano-forte, she never did learn the art of bread-making, nor of good housewife.

called bread, demonstrates that however skilfully the wife may thumb the piano-forte, she never did learn the art of bread-making, nor of good housewife.

BLACK ANTS.—A correspondent asks the following question: "Will you please ask your numerous readers what remedy I can adopt to destroy 'black ants?'" As one of the numerous readers of your paper, allow me to answer the "lady friend."

Take about a tablespoonful of common red lead, which can be obtained at the painter's, and mix it with a sufficient quantity of molasses to make a thin paste. This will catch a part, and disperse the balance of the trespassers.—*Journal.*

If quick lime gets into the eye, so as to darken the cornea, by penetrating the coating, the best remedy is said to be water saturated with sugar.

THE POINTS OF A GOOD WORKING OX. The head should be long and slender. The short headed ox may start tolerably quick at the whip but will soon get it. The eye should be sharp but casant. The black-eyed ox is apt to run away. For strength he should have good bosom. For traveling the legs should be straight and the ankle smaller than the foot; the toe should be directly forward. If the animal toe out the knee will bend in, and the leg will be as much weaker than a straight one as a crooked stick is weaker than a straight one for bearing a weight placed on the top of it; with such a form the side claw is liable to be strained. Avoid the long peaked hoof. Let the neck be straight from head to tail—pugh from the hips backwards, if he pe a little it is not much of a fault; it don't let him rise in that part. For roundhood, the round built or round ribbed ox—one that is not in danger of locking his hips off in going through woods is best. He should be trained to the yoke quite young. Three ear-ropes to work, but not over worked, would do as much labor, as four pairs that are not broken until they have nearly attained their growth.—*Chemung Republican.*

The Editor of Ohio Cultivator has been on his travels, and thus describes *The Great Durham Cheese Factory*, tried on by Lysander Pelton, of Gustavus. Mr. Pelton gave me a few figures of his operations, by which it appears that he uses the milk of about 3,000 cows. He has four factories, situated in different townships in the northern part of Trumbull, for which the curd is gathered daily, except Sundays, by men employed for the purpose. The curd is "run up" by the owners of the factories, and drained in a strainerbag; for which he pays 5 cents a pound. One hundred pounds of this curd will make 70 pounds of green cheese, or 62 pounds of aged cheese at four months. The curd is carefully salted at the factory, and put in kegs of 30 pounds each. Last year

Mr. Pelton marked his best cheeses in New York. This year he proposes to try the Cincinnati market. He will probably make 250 tons weight during the season. He thinks that on account of the backwardness of the season, the lack of cows, and the over-much rains, there will not be over three-fourths the usual yield of dairy stuff this season. As to the comparative economy of butter and cheese making, Mr. P. says the milk to produce one pound of butter, will make three lbs. of cheese, so that when cheese sells for eight cents, butter should sell for at least twenty cts. to make a relative price, allowing a good margin for the cost of curing the cheese..

THE HORSE CHARM; OR THE GREAT SECRET FOR TAMING HORSES.

The horse-caster is a wart, or excrescence, which grows on every horse's fore legs and generally on the hind legs. It has a peculiar rank, musty smell, and easily pulled off. The ammoniacal effluvia of the horse seems peculiarly to concentrate in this part, and its very strong odor has a great attraction for all animals, especially canine, and the horse himself.

For the oil of eumin, the horse has an instinctive passion—both are original natives of Arabia, and when the horse scents the odor, he is instinctively drawn toward it.

The oil of Rhodium possesses peculiar properties. All animals seem to cherish a fondness for it, and it exercises a kind of subduing influence over them.

The directions given for taming horses are as follows:

Procure some horse-caster, and grate it fine. Also get some oil of Rhodium and oil of eumin, and keep the three separate in air-tight bottles.

Rub a little oil of eumin upon your

hand; and approach the horse in the to him, be gentle. Love him, and he field, on the windward side, so that he will love you. Feed him before you do can smell the cummin. The horse will yourself. Shelter him well, groom let you come up to him then without him yourself, keep him clean, and at any trouble. night always give him a good bed, at

Immediately rub your hand gently least a foot deep. on the horse's nose, getting a little of In the winter season, don't let your the oil on it. You can then lead him horse stand out a long time in the cold, anywhere. Give him a little of the without shelter or covering; for re- castor on a piece of loaf sugar, apple or member that the horse is an aboriginal potato. native of a warm climate, and in many

Put 8 drops of oil of Rhodium into respects, his constitution is as tender as a lady's silver thimble. Take the thim- a man's.—*Selected.*

ble between the tumb and middle finger of your right hand, with the fore finger stopping the mouth of the thimble, to prevent the oil from running out whilst you are opening the mouth of the horse.

As soon as you have opened the horse's mouth tip the thimble over up- on his tongue and he is your servant.— He will follow you like a pet dog.

Ride fearless and promptly, with your knees pressed to the side of the horse, and your toes turned in and heels out; then you will always be on the alert for a shy or sheer from the horse, and he can never throw you.

Then if you want to teach him to lie down, stand on his nigh, or left side; have a couple of leather straps about six feet long; string up his left leg with one of them round his neck; strap the other end of it over his shoulders; hold it in your hand, and when you are ready, tell him to lie down, at the same time, gently, firmly and steadily pulling on the strap, touching him lightly on the knee with a switch. The horse will immediately lie down. Do this a few times, and you can make him lie down without the straps.

He is now your pupil and friend. you can teach him anything, only be kind

CLEANSING THE MOUTH.—The mouth should be rinsed every morning with cold water. This frequent washing is necessary, because small particles of food settle about the interstices of the teeth, and if not removed, will affect the breath, and gradually have an influence upon the teeth.— The tongue, also, ought no less be cleaned every morning, either with a small piece of whalebone or with a leaf of sage—which last is also useful for polishing the teeth.

GLASS MILK PANS.—A farmer in Akron, Ohio, has been experimenting with milk in glass pans. He says: "I took the milk of the same cow, milked at the same time and divided it equally, putting half in a glass pan, and half in a tin pan, and placed them side by side. In the first twenty-four hours, were two thunder showers; and at the end of that time, the milk in the tin pan was sour; that in the glass pan was sweet and good. At the end of twelve hours more, that in the tin pan was thick clabber, and that in the glass began to turn. From this I believe glass pans will preserve milk one third longer than tin pans." We believe farmers are beginning to find this out, as we have heard of a number who were introducing glass instead of tin. We have referred to the superiority of glass over tin for dairy purposes, several times within the last year or two.

LARGE DEPOSIT OF HONEY IN A CHIMNEY.

Somewhat singular discovery was made a short while since at the corner of Spring and High streets, in St. Louis. The St. Louis Argus has the following account:

The inmates of one of our largest up town

mansion houses, a few days since, were surprised to find a large number of bees flying about in two of the upper rooms. As the little fellows continued to occupy the places, a bee naturalist was sent to investigate the matter. On entering the rooms, he exclaimed, "You have honey somewhere here," and proceeded to search for it. On removing the fireboard he discovered that one flue of the chimney was full of honey comb, which was hanging down into the fire-place, and the honey dropping from it; proceeding to the top of the house to sound the chimney, he found it the same; one flue of the chimney was full, and the bees were industriously at work there also. These flues of the chimney had never been used; they were plastered smooth inside were perfectly dark, a stone having been placed on the top of each flue. The bees had descended the adjoining flues, and found small holes about ten inches from the top of the chimney leading into the closed flues, and through these holes they had made their way in and out. They have, as is supposed, occupied these places for three years, having been kept warm in the winter by the heat from the adjoining flues. On removing the fireboard, the bees seeking the great light which had broken in upon them, descended to the room and gathered on the windows, until they were covered to the thickness of three inches. It is estimated that there are in the two flues from 40,000 to 50,000 bees, and from two to three thousand pounds of honey.

MULTICOLE RYE.—I herewith send you a few heads of my Multicole Rye, which will show you the growth of it. The heads are generally about six inches long, and I am fully convinced that I shall have full 33 per cent. more of this rye per acre than of the old rye. The straw grows larger, its berry is smaller, and it gives better flour than the common rye. Should any person wish to procure seed of it, I can supply them. **SOLOMON D. CRISPELL.** *Hurley, Ulster Co., N. Y.*

Country Gent.

COAL TAR, &c.—Please advise me whether cotton cloth, fastened to sheeting and covered with coal tar and sand, will make a durable water-proof roof; or, if this is liable to melt and run, what substance should be mixed with the coal tar to harden it, and the proportions? Also whether coal tar will prevent posts in the ground from rotting? **U. TURNER.** *Jackson Co., Mo.* [We have never seen coal tar used as proposed, but do not perceive why it should not succeed. Coal tar has often been mixed with sand and fine gravel, for forming walks on side-hills where they were otherwise liable to

wash; the sand stiffened it sufficiently, and it kept its place perfectly. We would recommend the tar to be made quite warm or hot, and then mixed to a consistence of thick paint with clean sand, and applied with a fine wire brush. We have used it with great success on perishable wood, exposed constantly to air and moisture, where it acted as a perfect preservative; and if posts could be soaked some days in it, while hot, it would undoubtedly render them very durable.]

Country Gent.

HOW TO GET CHEAP TURNIPS.

Turnips are coming more and more into use among us for feeding stock, and it becomes a question how to produce them at the least cost. Even the white fleshed field turnips are valuable for feeding in winter, and a stock of them judiciously fed tells a good story, in milk or in beef.

We tried an experiment with the cow horn turnip, as a second crop after corn, the past summer. The corn consisted of about one acre, had been manured with fish applied to the growing crop in June, and yielded about sixty bushels to the acre. The sod was in good heart, but not highly manured. The seed was sown at the last hoeing, early in August. As the ground was shaded by the corn, the turnip seed came up well, and the young plants made good progress even in dry weather. About the middle of September the corn was cut up and put in shocks. The turnips having full advantage of the sun, came on rapidly, and by the middle of October had made roots two or three inches in diameter and a foot in length. We thinned them, taking off about fifty bushels, and a final gathering the last of November of over fifty bushels more. The whole expense of raising them was the harvesting, which we estimate at four dollars.

Turnips at four cents a bushel are a cheap fodder. The seed sowing was trusted to an inexperienced hand, or the yield would have been much larger. Full one-third of the field was vacant. We think this the cheapest way of raising turnips, and propose to follow it until we find a better.—*Boston Courier.*

FIRST-CLASS FAMILY JOURNALS.

—**LIFE ILLUSTRATED:** A First-Class Pictorial Paper, weekly, \$2 a year; \$1 for half a year
WATER-CURE JOURNAL: Devoted to the Laws of Life and Health. \$1 a year
PHRENOLOGICAL JOURNAL: Devoted to the Improvement of Mankind. \$1 a year. The three JOURNALS sent one year for \$3. Address
FOWLER AND WELLS, No. 308 Broadway, N. Y.

WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALERS IN
Drugs, Medicines and Chemicals.



DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco.

All the Patent or proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring.

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—*Pope.*

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**

Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

FARMER'S HALL, RALEIGH, N. C.

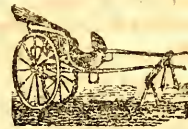


The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as **JENKINS' OLD STAND**, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times.

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS !!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

4-tf

W. L. POMEROY, PUBLISHER.

BOOKSELLER & STATIONER, RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND SCHOOL BOOKS.

AMERICAN, ENGLISH, AND FRENCH STATIONERY,

BLANK BOOKS

Of every description, including RECORDS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety ever produced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other.—The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

Fort Smith, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Goree, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supersede the use of every other," and the following certificate settles the question of its value for Hay:

"We, the undersigned, saw "that pea-vine," and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.
B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says: "If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 1½ acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

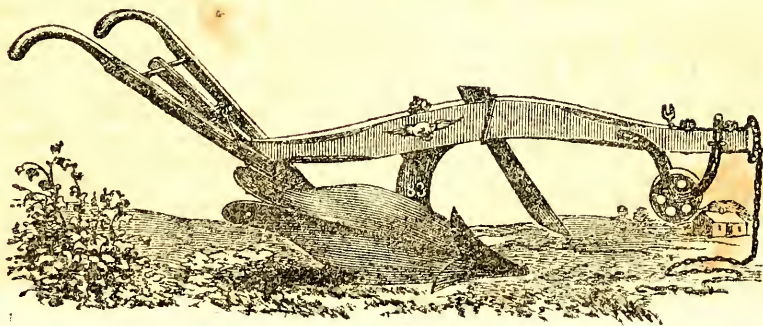
We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail.—They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount if their orders are forwarded immediately.

Feb. 57.—3m's



PAYMENTS FOR THE ARATOR,

Since the June number.—Lawrence Hinton, Willis Whitaker, George W. Thompson, R. Trawiek, 1 dollar each; Owen Fennell, (by H. & W.) 2 dollars; L. W. Peck, 3 dollars.

INDEX TO JULY NUMBER.

Surface covering to improveland, 773; Recipes, 775; P. Fog in a Dilemma again, 775; Kendall turned Shepherd, 776; Cows poisoned by wild cherry, 776; Sure way to improve land, 777; Guano, 777; Mulching tested with Corn, 778; The Crops, 778; Breeding Stock, 779; Raising Young Stock, 780; Various remedies, 781; Perkinson's Carriage Shop, 781; Johnson's hand Sugar Mill, 781; Sun Stroke, 781; Home Industry, 782; The Horse Charm, 783; The Durham Cheese Factory, 784; The Points of an Ox, 784; Glass Milk Pans, 784. Large deposit of Honey, 786; M Rye, 786

VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the rail road Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1856.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers that he has obtained from John Kirkpatrick, Esq. of

this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, that planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 1½ feet, at one dollar per package. If sent by mail, thirty cents must be added to pay postage.

SAM'L J. HINSDALE,
Fayetteville, N. C.

Jan'y 15, 1857.

12 23

Scientific American,

ONE THOUSAND DOLLAR CASH PRIZES.

The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemie Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200. for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually, a complete and splendid volume, illustrated with several hundred original engravings.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent gratis.

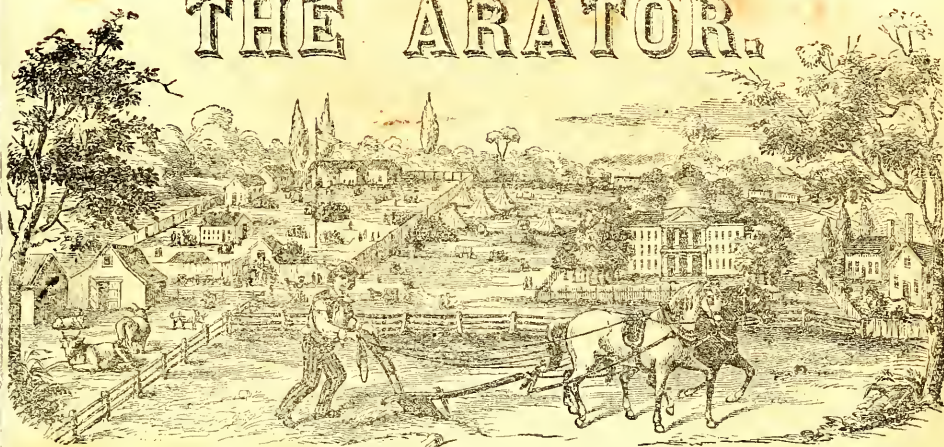
Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.

THE ARATOR.



Agriculture is the great art, which every Government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve.—JOHNSON.

DEVOTED TO AGRICULTURE AND ITS KINDRED ARTS.

COL. III.

RALEIGH, AUGUST, 1857.

NO. 5

NORTH-CAROLINA ARATOR.

By THOS. J. LEMAY, EDITOR & PROPRIETOR.

TERMS.—Published on the first of every month.
ONE DOLLAR A YEAR, invariably in advance.

Advertisements, not exceeding twelve lines
each and every insertion, one dollar—containing
one, at the same rates.

Suggestions for manuring and cultivating the Tobacco Crop.

The quantity of labor required by the tobacco crop, and the fact that it is a money crop, makes it incumbent upon the planter to devote to it his best fields; moreover, for the same reason, it monopolizes the manures of the plantation. These circumstances, in connection with the engrossing nature of the crop, withholding the working force from the collection of manuring materials and the growth of manuring crops, account for the general wearing down of tobacco plantations, much more than the exhausting quality of the plant itself. Tobacco is not an exhausting crop, as compared with wheat and corn. A more thorough preparation of the land than either of those crops ever requires, is essential to its successful culture: this tends to the preservation of the soil. Very soon after the crop is planted, the expanding leaves shade the ground from

the summer sun,—and its system of large broad leaves gather a large amount of nutriment from the atmosphere.—Beside this, it ripens no seeds, and the tops, suckers and stalks, return a considerable quantity of highly fertilizing material. Every planter knows that he has no better manure on his farm, for any purpose, than his tobacco stalks.

The necessity for manuring the crop continues, and the present extraordinary prices offer greater inducement than for a long time before, for the most thorough preparation and enriching of the soil. Fortunately the planter is now able to avail himself of portable manures which, however high their price may be in relation to the wheat crop, will amply remunerate him in the tobacco field. There is not, therefore, the same occasion, as formerly, for withholding the manures of the farm from the grain fields. Nor is it essential to reserve the best fields for tobacco.—With the use of a few hundred pounds of the proper fertilizers per acre, a broom-sedge field is considered by judicious planters a good fallow for the tobacco crop. Ten to fifteen dollars worth of such manure per acre producing crops which, at present prices, pay three or

four times over what the land would sell for.

We have been at some pains to determine the best fertilizer for this crop from the experience of practical men, and do not hesitate in our preference for a combination of Peruvian with Colombian or Mexican Guano. The writer has now such emphatic evidence on the growing crop of wheat, of the permanent effect of the Colombian Guano obtained from the Philadelphia Guano Co., and applied the first week of last June, that he gives that the preference decidedly over the Mexican for his own land. The experience of others satisfies them with the Mexican, and its lower price recommends it.—The combination and thorough mixing of either of these with Peruvian, will produce probably the greatest effect of both. This mixing is not essential, however, and they may be, and are most usually applied separately. Peruvian Guano alone ensures a good crop—Mexican alone a poor crop—but Peruvian and Mexican together, a crop much superior to Peruvian alone. An intelligent correspondent of the *Petersburg Farmer*, Mr. R. H. Crawley, in narrating his experiment of last year, says: "The difference in favor of that portion of the field which had the application, both of Peruvian and Mexican, was so perceptible as to make a streak through the field, which could be perceived half a mile throughout the growth, and when it came to the knife I am certain that one plant was worth two; and after it was cured, I think I could have picked nearly every plant out, though it was mixed in the barns."

As to the method of using guano, it is probably not safe to put the Peruvian in the hill made in the usual mode of preparing tobacco land. We know of no one who has used it in that way. It is better to sow broadcast immediately before laying off the land for making the hills; the guano is then drawn together into the hill without being so much concentrated as to endanger the young plant. The objection to this method is, that at the first working or

weeding of the crop, the surface of the hill being drawn away, the guano is exposed to waste. The most usual and best method, we think, is to run a tolerably deep furrow, sow the guano along the furrow, and throw the earth over it from each side, making a list, and plant on the list. This plan is highly approved by many who practice it. They lay off the furrows $3\frac{1}{2}$ to 4 feet, and plant on the list from 20 inches to $2\frac{1}{2}$ feet. It is not advisable in any case to give less than $3\frac{1}{2}$ feet distance between the drills; the other way it may be regulated according to the strength of the land, or the quantity of manure used.

The quantity of guano used should be from three hundred to five hundred pound of Peruvian and Mexican or Colombian mixed, in equal quantities of each. Mr. Crawley whose experiments we mentioned above, on a sedge field sowed 300 lbs. Peruvian Guano in the drill, and after weeding, ran the bar of the plow to the tobacco, and dropped Mexican opposite the plants on each side at the rate of two hundred pounds to the acre. If the guanos are not mixed before being used, we should prefer sowing the Mexican broadcast. Its action is so much more lasting, that it is desirable on account of the crop following, to have it distributed through the soil. The Peruvian, not being expected to last beyond the growing crop, should be placed where it can be made most certainly available, and at the same time, not liable to loss. The bottom of the furrow would seem to be its best position. One planter, who uses Peruvian alone, strews 150 lbs. in the furrow to the acre, and at the second plowing runs the bar to the tobacco, and puts the same quantity along this furrow, throwing the earth immediately back upon it.

There are many young planters among our readers, and others whom the high prices will induce, for the first time, to cultivate tobacco, for whose benefit we make a few timely suggestions. The quality of a crop depends very much upon its steady, uniform,

unimpeded growth from the start. For this end, a thorough preparation of the soil is essential. If the necessary ploughing has now been done, and the ground is cloddy or otherwise rough, it should be most thoroughly harrowed. No one knows until he has tried it, how much hoe labor is saved by having the surface in fine order, besides the general advantage in the growth of the crop. In making up the hills, or preparing the drills for the young plants, the hoe will carefully remove all lumps, and make a perfectly fine bed for the immediate occupation of the plants must be carefully set in the ground; in the hurry of planting, careless hands will frequently bend up the tap root, and a plant so put in the ground, will live sometimes ten days or more, but finally die. The ground must be opened with two or more fingers, and when the plant is inserted, the earth pressed firmly back to the full depth of the hole made. Rapid planters will put the plant in a hole made with a single finger at the risk of doubling up the root, and merely press up the earth with the thumb at the surface of the ground, leaving the hole unfilled beneath, to the certain destruction of the plant if the weather comes hot and dry. The work of planting is always one of excitement and hurry. The quick hands are ambitious to show what work they can do, and the slower ones to keep pace with the others. The tendency on their part is rather to do much, than to do it well. It is of the utmost importance, therefore, that the master or manager gives his closest attention to the manner in which the work is done. He must not take it for granted that the fastest planters do their work most imperfectly, for this is by no means the case, but let him give his most vigilant attention, to see that every one, whether slow or fast, does his work well. The "stand" depends much more on the manner of planting than on the season.

The young planter must take care lest his fear of not having another planting season in time, or his ambition to make a large planting, induce him to

draw his beds too closely at first. The first drawing should be made rather to relieve the bed of the larger plants, than to make a large planting. If this is judiciously done, the bed improves rapidly, and in a week or ten days a large planting may be made; but if too closely drawn at the first drawing, the beds are often seriously damaged for the whole season. Draw none early in the season but those of good planting size. At a later period, those of much smaller size, which have turned yellow and seem to have stopped growing, will be found to have large roots, and will endure transplanting better than larger and more vigorous looking plants.

The "weeding," or first hoeing of the crop, is an important operation. It is desirable to have this done as early as may be, after the plant has taken hold of the ground—say in ten days or a fortnight. In very dry and hot weather many plants will be destroyed in the operation without extreme care. A lazy hand sooner than stoop to pick the small grass from about the plant, will push his hoe against it so closely as to break and bruise it, and sometimes tear it out of the hill, or chop away so much of the earth as to cause its death. In such weather it may be found essential, if the grass is not advancing too rapidly, to postpone the weeding till a shower puts the ground in better condition for the operation. It is the more important to begin the weeding early, to anticipate such a condition of the weather, for it is destruction to the crop to be caught by such a spell "in the grass."

As to worms, there are one or two suggestions that will be useful to the young planter. Those which come in the early growth of the crop, are not destructive, being usually comparatively few, and the leaves yet small; they should be destroyed, however, and the tobacco being small, a good flock of turkeys will probably subdue them.—But when the great glut comes in August or September, and the crop has attained considerable size, let not the mistake be made of supposing that a flock of turkeys, of whatever size, is suf-

ficient to protect it. Nothing less than the whole available force of the farm should be brought to bear upon them until they are exterminated. This "glut," as it is termed, should be watched for and anticipated; and as far as possible, the young worms should be destroyed in the first stage of their existence—in the egg, or before they begin to crawl away from where they are hatched. A great deal of labor and loss may be saved by taking them thus early. But they grow very rapidly, and should they have got the start, no pains must be spared to destroy them as early as possible. The field must be gone over and over again if necessary, till the work is complete. We press the necessity of this work, because many persons without experience, suppose that a large flock of turkeys; with the help of a woman and two or three children, may be relied on to keep the worms down. They are always useful *helps*, and if driven regularly through the field destroy a large number; but when the worms appear in great quantities, as they frequently do, a dependence upon such laborers may prove the destruction of the crop.

These suggestions upon several important points, are designed to fix the attention of the young planter upon them especially. He will of course have got the advice of his most judicious neighbors as to the general management of so important a crop. We give him warning that, with the best assistance he can get, it will tax his care and watchfulness throughout.—*Amer. Farmer.*

A SEVEN FIELD ROTATION.

Mr. A. Y. Moore, an ex-President of the Michigan State Agricultural Society, and said to be an excellent practical farmer, furnishes to the *Ohio Farmer*, the Rotation he has adopted and practiced for a wheat farm; land, climate and location being best adapted to that crop.

His farm contains 160 acres, 20 of which is devoted to garden, lawn and lots for root crops, pasturage, &c. The

remainder is divided into seven fields of 20 acres each, which are farmed on the following plan. First year, corn, second oats, third wheat, fourth clover, fifth wheat, sixth wheat, and seventh clover.

The Rotation begins with corn upon a clover sod, the clover being filled with seed at the time, and all the manure of the farm yard ploughed under with it. He ploughs deeply for corn, and aims to bury the clover seed so deeply that it will not be brought to the surface or germinate before it is wanted. His corn is worked on the surface.

For the crop of oats, the ploughing is shallow, that the turf below, and the seed, may not be disturbed.

For wheat the oat stubble is ploughed deeply, bringing to the surface the rotted turf and clover seed making a dressing for the crop of grain and seeding the ground amply for a "set" of clover without additional seed.

The fourth year the clover is grazed a part of the season and enough allowed to go to seed to seed the ground again. This is ploughed down deeply and wheat sown in the fall.

The fifth year the wheat comes off, the stubble is again deeply ploughed to bring up the rotted turf and seed of the foregoing year, and wheat sown again.

The sixth year the wheat is followed by clover, which occupies the ground during the seventh; after which the corn begins the rotation as at first.

We give this plan of cropping, that our readers in arranging their rotations may have the benefit of its suggestions. The economy of clover seed is worthy of notice. Yet it is by no means certain, to our mind, that this advantage is not gained at too great an expense.—The turning under of the clover stems after they had ripened the seed, would we think be unfavorable to the crop of wheat. And the seed germinating as it would in the fall immediately after the wheat seeding, the clover would advance rapidly in the spring to the injury of that crop. Under ordinary circumstances clover seeded in September, or early in October will bloom and ma-

ture, nearly as soon as that sown the previous spring. A vigorous and thick growth of wheat may however so restrain it as to prevent an injurious interference.

A pea-fallow might advantageously take the place of the crop of oats, or immediately succeed it, the peas having been sown with the oats.

So many divisions of the farm are very objectionable unless cross fencing be abandoned, as it ought to be, where grazing is not a part of the system.—The day will come when grain growers and planters will be amazed at the willingness with which they have so long borne this enormous tax of cross-fencing for the mere accommodation of their working stock and a few milch cows.—*Amer. Farmer.*

SUPER-PHOSPHATES.

An esteemed correspondent in Virginia, alluding to a communication of Prof. Gilliam, in the *Southern Planter*, discussing the merits of De Burg's and Mapes' Super-Phosphates, begs us to give our opinion as to whether these strictures are just, especially as regards De Burg's, of which much has been sold in that State.

It will be observed that Professor G. proposes to discuss the subject "so far as it is a *chemical* question," and he concludes, as the result of his investigation that "it is manifest that neither De Burg's nor Mapes' Super Phosphate have any claim to the confidence of the agricultural public; of the two, however, De Burg's is far preferable." All that we have to say to this is, that as regards DeBurg's Dr. Stewart says just the contrary. We leave these gentlemen to discuss the "*chemical* question" to their heart's content.

For the *practical* question, we have no knowledge of either from our own experience, but we have carefully watched the testimonials in favor of De Burg's. There is not the slightest reason to doubt that the very many certificates, published as coming from practical men, are genuine. Some of these bear most emphatic testimony to its efficien-

cy, and many are from farmers known to us as men of careful observation and sound judgment. On the other hand, we know that with others, it has failed signally. One farmer informed us that one season it succeeded admirably, and he preferred it greatly on account of the price, to Peruvian Guano; the next season he induced several of his neighbors to buy, and it failed with all of them. We have called on our subscribers repeatedly, and have made inquiry personally, as we have had opportunity, and are compelled to say, that, on the whole, the testimony of those who have used it, so far as we have been able to learn, has been decidedly in its favor. The many exceptions to its success which have occurred, may be owing to peculiarities of season, or variations in the quality of the article, or in differences of soil, we cannot tell.—*American Farmer.*

WHEAT AND GUANO SOWER.

One of the most intelligent farmers of our State, who has given much attention to the subject of agricultural machinery, remarked to us a few days ago that one of the most formidable weapons with which we were to fight the Peruvian monopolists of guano, he believed would be found in the introduction of guano attachments to the wheat drill, whereby at least two thirds if not three fourths of the Peruvian Guano heretofore used, may be saved. We have heard of several trials of the kind, and have good reason to believe that the views of our friend are correct and he has suggested to us, to call upon those who have used the drill, to report the result of their crops, in comparison with the broadcast wheat—and also that those who have used the guano attachments the last year, will likewise report the result, for the benefit of their brother farmers. This is an important matter, and we appeal to the parties alluded to, to respond at as early a day as possible, in order that others may be benefited by their experience. By the use of these machines, together with the mixture of Phosphatic Guanoes

with the Peruvian, we will be enabled to dispense with a large portion of the latter, in comparison with the amount heretofore used.

The Alexandria, (Va.) Gazette, notices a newly invented machine for sowing wheat and guano, introduced by Mr. Fawkes, of Orange Co., Va., which is thus described, and we hope some of our manufacturers will see to its introduction into this market before seeding time:—

"Its construction is simple, but very complete. It is an entire machine with in itself, can be hauled without waste of wheat and guano any required distance, when it can be thrown into gear in an instant, and will spread the wheat and guano in various conditions, with great regularity, and do the work well. Two plain rollers are used in this machine as distributors, with scrapers to each, and breakers or pulverizers under the same, for pulverizing the guano, which leaves it in a fine and loose condition, and sows it with minitable evenness over the ground.

"There is in this machine a Swinging Diaphragm, or dividing board, running lengthwise of the hopper, which prevents arching over the feeding cylinders—an evil much complained of.

"The machine can be seen at Catts' Tavern, at West End."

From the Greensboro' Patriot and Flag.

EXPERIMENT WITH PEAS AS A FERTILIZER.

Messrs. Editors:—It is a fact which may have some bearing upon the prosperity of this country that at the present day very few of those who aspire to and attain even a partially classic education, are content to engage in agricultural or mechanical pursuits. The study of the law, and the emoluments of legal practice, have attractions for many—very many of the youths of the land, while divinity is receiving constant accessions, and growing [pardon me for saying] formidable in numbers, if not in piety and power. The disciples of Æsculapius are daily increasing the ranks of Hippocrates, meet us at

every corner, and are ready to administer a pill. School teachers multiply beyond precedent, demand high salaries and some of them are a curse to society. But Agriculture and Mechanics! where are your votaries? and who are they? Are they to be tavored in the restaurant as fashionable gluttons, or at the billiard table as expert gamblers? Not so. The circle of inventive genius and the place of practical employment are coincident with the latter, while the field of nature is the province of the agriculturist, and his the privilege of cultivating it amid expanding buds and fragrant flowers, the carols of birds and the murmuring of gentle streamlets.

The scientific farmer, in addition to a constant survey of the works of nature as a source of enjoyment, has the light of science to guide him in the way to wealth, honor and distinction. His laboratory is indispensable as a solver of the great principles of vegetable growth and decay; the formation of voluntary compounds; their modifications and changes under certain circumstances, and their most available forms for the nutrition of crops, &c. &c. But as comparatively a few only are capable of making these investigations for themselves, information of this kind reaches the generality of those who obtain it, if at all, through the medium of the press, in the forms of books and periodical publications. Agricultural newspapers are of incalculable value to the farmer;—a treasure in the shape of the most valuable information relative to the various branches of his calling—accumulation of facts and figures based upon the scientific researches and the practical experience of the best informed and wisest men of successive generations: and yet how few can be prevailed upon to take them! Although the propriety of arresting the washing of our fields is admitted by all, many require argument to convince them of its great importance, and information to enable them to accomplish the task: and this argument and this information can be brought to bear only through the press.

But my chief object in taking my pen

to address you, was to communicate the result of an experiment made by me the present season, with the pea as a fertilizer. Having repeatedly read of its good effects, and judging from the constitution of the plant—its long tap root which descends into, and extracts from the subsoil a portion of its nourishment, and its large leaves which draw heavily upon the carbon and other substances of the atmosphere. I determined last year, to make an experiment. Accordingly, immediately after removing the wheat from a stubble field, I selected and measured a very poor piece of it the half of which I sowed in peas at the rate of one bushel per acre. About this time the drouth set in, and although the peas came up in a very short time, they remained almost stationary, (I mean of course,) that they grew but little for some weeks, and began to grow only with the Fall rain—finally attaining perhaps two thirds the size they would have reached under favorable circumstances. A short time before frost, I had the vines upon plat first, imperfectly turned under, breaking at the same time, the adjoining ground, or plat second, which had not been sown in peas. This plowing was followed by wheat harrowed in, and the yield upon a portion of each accurately, as follows:

	Yield.
Plat 1st. Strips 33 rods long, 10 feet wide— $\frac{1}{2}$ acre.	34 $\frac{1}{2}$ q'ts.
Plat 2nd. Same length and breadth, adjoining	13 "
Difference,	21 $\frac{1}{2}$ "

Showing a yield per acre of seven bushels and ten quarts upon the former, and two bushels and twenty-eight quarts upon the latter parcel, or in ten acres, seventy-two bushels and twenty-four quarts, and twenty-seven bushels and fourteen quarts, respectively. There appeared to be as great a difference throughout the piece, as on the small parcels tested.

In conclusion, Messrs. Editors, I am apprized of the fact, that the "Patriot and Flag," is not an agricultural paper; but I presume that a very large majori-

ty of its readers are tillers of the soil, and that if you have *not* a department for their special benefit, you are nevertheless disposed to favor them by the publication, consistently with your space, of whatever may in your estimation, be calculated to advance their interests.

Very respectfully,
D. G. N.

Pleasant Garden, Aug. 10th, 1857.

A CURE FOR HYDROPHOBIA.

We have received from a gentleman at Berlin the following important statement of the mode of cure practiced in the Ukraine for the bite of a mad dog. It is translated from the Berlin State Gazette (No. 20) of the 14th February, 1822, and does certainly seem entitled to the fullest consideration of all medical men. That the knowledge of this remedy may be extensively known, and further put to the test by experience, we hope it will be copied into every journal throughout the country.

"When Mr. Marochetti, an operator in the hospital at Moscow, was in the Ukraine in 1813, in one day *fifteen* persons applied to him for cure, having been bitten by a mad dog. Whilst he was preparing the remedies, a deputation of several old men made its appearance, to request him to allow a peasant to treat them, a man who for some years enjoyed a great reputation for his cures of hydrophobia, and of whose success Mr. Marochetti had already heard so much. He consented to their request under these conditions:— (1.) That he, Mr. Marochetti, should be present at everything done by the peasant. (2.) In order that he might be fully convinced that the dog was really mad, he, Mr. M., should select one of the patients, who should only be treated according to the medical course u-

usually held in estimation. A girl of six years old was chosen for this purpose. The persons examined fourteen patients a fortnight, of the 'Summit' and Fl. of the 'Genista' (about a pound of each), and examined twice a day the tongue where, as he stated, the knots, containing the poison of the madness, must form themselves. As soon as the small knots actually appeared, and which Mr. Marochetti himself saw, they were opened and cauterised with a red-hot needle; after which the patient gargled with the decoction of the Genista. The result of this treatment was that all the fourteen (of whom only two, the last bitten did not show these knots) were dismissed perfectly cured at the end of six weeks, during which time they drank this decoction. But the little girl, who had been treated according to the usual methods, was seized with hydrophobic symptoms on the seventh day, and was dead in eight hours after they first took place. The persons dismissed as cured were seen three years afterwards by Mr. Marochetti, and they were all sound and well. Five years after this circumstance (in 1818) Mr. Marochetti had a new opportunity, in Podolia, of confirming this important discovery. The treatment of twenty-six persons who had been bitten by a mad dog was confided to him—nine were men, eleven women, and six children. He gave them at once a decoction of the Genista; and a diligent examination of their tongues gave the following result:—Five men, all the women, and three children had the small knots already mentioned—those bitten most on the third day; others on the fifth, seventh, and ninth; and one woman who had been bitten only very

superficially, on the twenty-first day.—The other seven who showed no small knots, drank the decoction Genista six weeks, and all the patients were cured.

"In consequence of these observations, Mr. Marochetti believes that the hydrophobic poison, after remaining a short time in the wound, fixed itself for a certain time under the tongue, at the opening of the ducts of the submaxillary glands, which are at each side of the tongue-string, and there forms those smaller knots, in which one may feel with a probe a fluctuating fluid, which is the hydrophobic poison. The usual time of their appearance seems to be between the third and ninth day after the bite; and if they are *not* opened after the first twenty-four hours after their formation, the poison is re-absorbed by the body, or into the body, and the *patient is lost beyond the power of cure*. For this reason Mr. Marochetti recommends that such patients should be immediately examined under the tongue, which should be continued for six weeks, during which time they should take daily 1½ lb. of the decoct. genist. (or four times a day the powder, 1 drachm pro. dost.) If the knots do not appear in this time, no madness is to be apprehended; but as soon as they show themselves, they should be opened with lancet, and then cauterised, and the patient should gargle assiduously with the above mentioned decoction."

"We hasten," says the Berlin Gazette, "to communicate to our readers this important discovery (which we borrow from the 'Petersburg Miscellaneous Treatises in the Realm of Medical Science for 1821,') which certainly deserves the full attention of all medical practitioners, and which, if confirmed by experience, may have the most beneficial results."

From the Canadian Agricultural.
PULVERISE THE SOIL.

Voelcker, Professor of agricultural chemistry to the West of England Society, Exeter, thus writes as to pulverization of soil:

"The efficacy of a manure or the practical effect of which it is capable, is greatly influenced by the mechanical condition of the land. Land varies very much in this respect, and, as a matter of course, the same manures act differently on land of different descriptions. I may illustrate this by referring to experiments I have made on land attached to Cirencester College, where I used superphosphate on a piece of ground which did not yield so much as another piece where none had been used; but I took the precaution to try the manure in a third place and here the yield was three times as much as on that which had not been manured.—The fact is that on clay land superphosphates are of no use unless the land is properly pulverized. Some farmers imagine that by using in the land the best artificial manures, they do not require so much labor, or any additional labor. There can be no greater mistake; for the best artificial manures often fail, more or less, entirely for want of proper pulverization of the soil. It is of great consequence that the land on which artificial manures are used should be in a high state of sub-division. Artificial manures can only be used with advantage by farmers who have improved agricultural implements and methods of tillage, and paid a great deal more of attention to the mechanical condition of the land than farmers of the old school. If a farmer has not sufficient skill to manage a farm on improved principles throughout, the mere use of artificials will help him comparatively little, and he will perhaps do better to stick to farm yard manure under such circumstances."

SUGAR AND MOLASSES BY THE ACRE.

The Boston Journal of Saturday last says that there is now stored on the Boston wharf, South Boston, in bond,

over six acres of these two articles.—There are also large quantities in other localities. What is to become of it all? There is a similarly large stock in all the principal cities of the United States, showing clearly that it was not a scarcity of these articles, now become a necessity of life, that has run up the price more than double within a year. There is now in Boston, New York, Philadelphia and Baltimore more than three times the stock of sugar that there was a year since.

DROUTH—PROTECTION AGAINST IT.

The frequent stirring of soils between the rows, is undoubtedly a protection, and, in ordinary cases, a sufficient protection against drouth. The air passes freely through soils frequently stirred; and whenever air comes in contact with a body colder than itself, it deposits moisture, as in a tumbler filled with ice water at the dinner table, or in the particles of a soil at some inches depth, and consequently colder than the air above the surface. When the farmer sees his tumbler sweat, as it is sometimes expressed, he may be assured, that so it fares with the soil six or eight inches below a well stirred surface, provided the soil were mellowed to that or a greater depth before the crop was put in.

Mulching is often an efficient protection against drouth. Straw, coarse hay leaves, mold from the woods, chips, or even a pile of stones, laid around the roots of a newly set tree, retards evaporation, and secures a moist condition for the roots. It is so with strawberries if the ground is mulched between the rows. Raspberries, blackberries, gooseberries, and many other crops may be partially protected in the same way.

But the great sources of protection in our country is in deep ploughing. On a soil of any decent consistency, it would be impossible that a crop should suffer from the drouth, if the soil were pulverized to a depth of fifteen inches, because the lower portions of such a soil would retain moisture till long after the surface should have received new

supplies from the clouds. If our readers are alarmed at fifteen inches as depth which they despair of reaching, we think them too easily alarmed, but still we will meet them on higher ground. A field thoroughly pulverized to a depth of ten inches will seldom suffer from the drouth. Abundant and reliable testimonies have been published, going to show that fields ploughed to a depth of eight or ten inches have escaped unhurt, when other fields, equally well cultivated, with the single exception they were ploughed but half as deep, have utterly failed of giving crops. That deep ploughing is a sufficient remedy against any ordinary drought—any but the very longest and severest—is an *established* truth.—*Ed. Plow Loom and Anvil.*

RAISE AND USE MORE FRUIT.

The Life Illustrated concludes an excellent article on the "Right Use of Fruits," as follows:

"Who but must feel, in view of what has been said, that we use too little fruit—that we raise too little fruit? Let every man who has an acre of ground plant one tree more. Those who are destitute of fruit may have a most excellent sort the first year by setting out the strawberry; and by watering freely after the commencement of blossoming the duration of the bearing season will be greatly prolonged. Meanwhile cultivate the raspberry, currant and grape, which, in from two to four years will yield a most luscious harvest. At the same time, too, let the cherry, pear, and apple be growing, and the greatest variety may soon be made crown the board, while not a year need pass without a share of these natural and health-giving luxuries."

TEA AS A SUMMER DRINK.

Frederick Sala, writing from Russia to the Household Words, mentions that on a table near him stands a "largish tumbler filled with a steaming liquid of a golden color, in which floats a thin slice of lemon. It is tea—the most delicious, the most soothing, the most thirst-allaying drink you can have in summer time in Russia." Tea flavor-

ed with a slice of lemon we have never tried, neither are we prepared to recommend as a summer beverage, tea steaming hot, as Sala does,—But tea made strong (as we like it, or as strong as you like it,) well sweetened, with good milk, or better, cream in it, in sufficient quantity to give it a dark yellow color, with the whole mixture cooled in an ice chest to the temperature of ice water, is "the most delicious, the most soothing, the most thirst-allaying drink" we have ever treated ourselves or our friends to. We know of nothing to compare with it for deliciousness or for refreshment. It cheers, but not inebriates. Its stimulus is gentle, its flavor exquisite. Try it, good reader; make a note of this now, and when the summer fever visits you, and you feel, with Sidney Smith, that for the sake of coolness you could get out of your flesh and sit in your bones, try our specific of ice cold tea. Ice cream is the only preparation fit to be mentioned with our cold tea.

From the Plow, Loom and Anvil.

A SMALL FIELD AND A LARGE FIELD.

Mr. Isaac Fairchild, keeper of the Eagle Hotel, at Cortlandville, N. Y., and cultivator of a ten acre farm, or rather garden, tells us that last year, on one eighth of an acre of a deep alluvial soil, heavily manured, he grew 400 bushels of carrots; that they were sowed in rows nine inches apart, thinned to four inches in the row, the spaces being carefully filled, so as to leave no vacancies; and that although he ploughed but ten inches deep, the roots, owing to the richness of the soil, extended to twice that depth, and some of them more, actually measuring two feet in length, and from two to three inches through the large end. Mr. F. does not claim that he took the statements of the men who harvested the crop, and thinks, what we very much suspect may be true, that possibly they may have enlarged the number of bushels, by carelessly allowing the roots to fall crosswise into the measure—influenced perhaps by a desire to make as large a story as the case would admit. Now four carrots to the square foot, according to his mode of planting, would give 174,540 to the acre, making no allowances for vacant spaces; and if the size were such that 54,45 carrots, or about 54½ would fill a bushel, they would give 3,200 bushels to the acre, not less than 60 tons. But we are quite sure there is very little land on which carrots would grow so thickly and yet attain a good size, nor does Mr. F. commend this mode of cultivation. He only tried it once to see what could be done; and has this year planted

his carrots in rows 18 inches apart, instead of nine; as last, believing that this way he will grow as profitable, if not as large a crop. He esteems carrots the very best of feed for milk cows; the best to fatten horses not at work; and better for working horses, given in part with oats, than oats alone.

MOLASSES.

The Patent Office at Washington did a good thing in distributing through the country the seed "Sorgho Sucre," or Chinese Sugar Cane; for in view of the high price of molasses, it is likely, before many years, to be extensively cultivated for the saccharine juice with which it abounds and which by an easy process can be converted in so very good syrup or molasses. Messrs. Joseph Sinton & Sons, of Henrico, obtained some of the seeds and raised a good crop of the cane, which is valuable as cattle feed even after the saccharine matter is pressed out. Saturday morning the gentlemen tried the cane for the first time as a molasses producer, with the following result:— One hundred and ten stalks were cut and pressed twice in a cider mill. The juice obtained, amounting to twenty seven quarts, was then put into a large dinner pot and boiled one hour and forty minutes, making one gallon and a pint of molasses. The article is good and very enticing to those who like sweet things of the kind. Possibly the introduction of the Chinese Sugar Cane may be the era of a new order of things in the sugar line. If the culture is found to be profitable, hundreds will engage in it with zest. The "Sorgho Sucre," though a foreigner, grows and thrives like a native on American soil.

RICHMOND SOUTH.

RECIPES.

Bread Omelet.—Put into a stew pan a tea-cup of bread crumbs, a teacup of cream, a spoonful of butter, with salt, pepper, and nutmeg; when the bread has absorbed the cream, break in the eggs, beat them a little with the mixture, and fry like plain omelet.

Mock Oysters of Corn.—Eighteen ears of corn grated, with three large tablespoonfuls of flour, the yolks of six eggs well beaten, with pepper and salt to the taste; let all be well mixed; have the lard boiling hot, then put in the batter about the size of an oyster.

Drop cake.—3 eggs, 3 ounces butter, 6 ounces sugar, 8 ounces of flour, nutmeg; drop on the pans; bake in a quick oven.

NORTH-CAROLINA: HER INSTITUTIONS, HER FARMERS
HER MECHANICS, HER MANUFACTURES, AND HER
MARKET TOWNS.

North Carolina Arator.

RALEIGH, N. C., AUG., 1857.

THE ARATOR DISCONTINUED, AND THE
OFFICE FOR SALE.

The publication of the Arator ceases with the present number. The Editor returns his sincere thanks to those who have favored him with their patronage and exerted themselves in securing that of others to his paper, and hopes that one will yet spring up among us, more worthy of their support.

The Editor also returns his grateful acknowledgments to his brethren of the press, for the courtesies they have extended to him, and takes his respectful leave of them with reluctance. They will of course discontinue their exchanges. He had not expected to part company with them so soon; but he retires with another lesson of profit, drawn from the fallaciousness of human promises and prospects.

As soon as he can find time to post his books, and ascertain the amounts which have been overpaid by the few who have paid in advance, what is due to each, shall be refunded by mail.


All subscribers remaining in arrears, are requested to make immediate payment. Remittances through the mail may be made at the risk of the Editor.


This number has been delayed to this late period, (November,) with the hope that the establishment would be sold and the paper continued in other hands. But this having failed, it is now offered for sale on the most accommodating terms. With the present list of between eight and nine hundred subscribers, there can be no doubt that, in the hands of a competent conductor, who would canvass the State, either in person or by agents, it would soon become a source of profit, and handsomely reward the efforts and expense bestowed upon it.


STEAM CARRIAGE SHOP, IN RALEIGH.

We are gratified to state that Messrs. Williams & Earp, intelligent and enterprising mechanics, have lately erected a two story brick carriage shop, in this city, in which they have introduced a fine steam engine, by which several parts of their work are executed with the utmost neatness and

precision. They will no doubt be able to turn out work as cheaply and substantially built as any made at the North; and our people will surely encourage them, as they deserve, instead of sending abroad for vehicles no better than they can get at home. Depend upon it, it is our true policy to support home industry.

 The fourth Annual Fair of the Granville County Agricultural Society will be held at Henderson, on the 14th, 15th and 16th days of October, 1857, we learn from the published list of Premiums; for a copy of which we are indebted to the politeness of Dr. A. C. Harris, the Secretary of the Society. They always do up things brown in Granville; and a brilliant and attractive show may be expected.

 We are indebted to the politeness of W. H. Jones, Esq. for a copy of the Premium List of the State Fair, which will be held in this City on the 20th, 21st, 22d, and 23d of October. John L. Bridgers, Esq. of Edgecomb, will deliver the Annual Address.

 The above was prepared for the press in August. The Fair at Henderson was greatly marred by rain. The State Fair was numerously attended, and will, we hope, improve for the time to come.

Cocoa-nut Cake.—4 cups of flour, 3 cups of white sugar, 1 cup of milk, $\frac{1}{2}$ cup butter. 3 eggs, 1 teaspoonful of cream tartar, one of soda one grated cocoanut.

GRAVEL WALLS.—A correspondent inquires of us if gravel walls for houses have been a failure, and if they have, thinks the fact should be extensively circulated as a matter of useful information. We have been told that gravel walls for houses have one bad feature, namely, they admit a great amount of moisture during long rainy storms. But for this defect (which can be remedied by a coating of cheap mastic cement,) we are assured they are both cheap, handsome, and durable. But we wish it to be distinctly understood, that no material, however strong, beautiful and cheap, it may be for walls should ever be employed for house building if it does not exclude the moisture in wet weather.

PRESERVING APPLES.—If apples are carefully packed in hardwood-sawdust, (how it would be with pine we know not,) they will keep in an open garret through our coldest winters, this we have

tried, and we know it for a certainty. But in packing, care should be taken that none of the apples touch the barrel nor each other. We have had them open in fine order when thus packed, long after those in the cellar were rotten, or so withered as to be useless.

A WORD TO BOYS.—Begin in early life to collect libraries of your own. Begin with a single book; and when you find or hear of a first rate book, obtain it if you can. After a while get another, as you are able, and be sure to read it. Take the best care of your book; and in this way, when you are men, you will have good libraries in your heads as well as on your shelves.

Keep some Object in View.—Every man, rich or poor, ought to have some absorbing purpose, some active engagement, to which his main energies are devoted. Not enjoyment but duty, daily duty, must be the aim of each life. No man has a right to live upon this fair earth, to breathe its air, to consume its food, to enjoy its beauties, producing nothing in return. He has no right to enjoy the blessings of civilization, of society, and of civil liberty, without contributing earnest and self denying labor of head and hand to the welfare of mankind. Certainly no man can be truly religious who makes gratifications, as distinct from self denying exertion, the great object of life, and the idler puts pleasure exactly in the place of duty.—*Exchange.*

LIEBIG'S LAST LETTER ON MANURES.

To the Editor of the American Agriculturist.

In Liebig's third and last letter on Agricultural Chemistry, lately published, he says: "It is therefore impossible to attribute the effect of stall manure to its combustible elements; *if these have any good effects it is of a subordinate nature.* The effect of the stall manure rests, without the least doubt, upon the amount of the incombustible elements of plants which it contains." If this doctrine is true, it is folly for a far

mer to save his stable manure from the waste of firebrag, and too rapid decomposition, as the ashes of the manure contain the only elements of much value to vegetable nutrition. But every farmer's experience and experiments in manuring and culture, disprove this darling theory of the great Chemist of Giessen. A conclusive proof of the fallacy of this mineral theory, is found in the very thorough experiments of J. B. Lawes and Dr. Gilbert, on the experimental farm at Rothamsted, England. There, during five consecutive seasons, an acre plot of land destitute of organic matter, was treated with all the mineral elements sufficient for a maximum crop, and sown with wheat. Another acre of the same soil, treated in the same manner, received an addition of 300 pounds of the sulphate of ammonia: when, at harvest, this plot, thus treated with ammonia salts, produced double the number of bushels of wheat contained on the other plot; like experiments afterwards produced the same results.

It is true that the atmosphere will supply growing plants with carbon, in the form of carbonic acid, enough for the structure of a maximum crop, but if the soil is deficient in nitrogen the crop will invariably be short; this is not only in accordance with repeated experiments at Rothamsted, but with every farmer's experience, which teaches him that a manure heap that has not lost its ammonia by firebrag, or combustion, is a much better manure than the ashes of the burned pile.

It is no reason, because growing plants receive that which forms their principal bulk from the atmosphere, carbon and the elements of water, that they also receive from thence a sufficiency of nitrogen in the form of ammonia. True, nitrogen forms but a small part in the composition of a plant; but its office is mainly as a solvent of silica (?) and preparer of other matters in the soil, into soluble plant-food. True, no plant can grow without the elements of its ashes, but the mineral soil is com-

posed of these elements and it gives them up by disintegration, long after the organic or combustible matter of the soil has been exhausted by growing crops. Again, those mineral elements are never lost in the decaying vegetable; the falling leaf and decaying thistle may die and lose their organic matter in the air, but the ashes remain to form the mineral basis for new plants.

S. W.

STRINGHALL.

Mr. Feron informs us, that this singular spasmodic affection is esteemed graceful in some continental countries; at least when it exists in both hinder legs as it frequently does, being however usually confined to one side: very seldom indeed is it found in the fore, of which we have seen but one or two instances at the most. It is evidently a spasmodic contraction of some one or more of the flexors of the leg, which usually ceases after the animal is in motion; it is the consequence of local irritation or of pressure on some nervous fibrils, which the excitement of exercise renders less acute; and generally restores the action of the legs to its natural condition. It is not hereditary or congenital, and seldom appears until the approach to the adult age.

THE BOSTON Medical Journal mentions the following simple and economical apparatus for overcoming bad odors, and purifying any apartment where the air is loaded with noxious materials. Take one of any of the various kinds of glass lamps—for burncamphene, for example—and fill it with chloric ether, and light the wick. In a few minutes the object will be accomplished. In dissecting rooms, in the damp, deep vaults where drains allow the escape of offensive gasses, in outbuildings, and in short in any spot where it is desirable to purify the atmosphere, burn one of these lamps. One tube charged with a wick is sufficient.

CLOVER.

From some suggestion in the Ohio Cultivator, on the cultivation of clover, we make the following extract, containing some valuable practical information:

"Clover wants potash, soda, magnesia, &c., as there is in every half ton of clover, twenty-three pounds of carbonic acid, sixteen pounds of potash, forty pounds of soda, eight pounds of magnesia.—These are taken from the soil, and on burning the clover, will be found in the ashes. Half a ton of clover—or eleven hundred pounds in exact weight—will make one hundred pounds of ashes; and in these ashes will be found the ingredients, and in the proportion we have mentioned, as well as phosphoric acid, sulphuric acid, chlorine, and sand in small quantities."

"Continued cropping of clover, taking these ingredients from the soil, will soon exhaust it, and unless they are supplied, the soil must cease to produce clover.

FIRST-CLASS FAMILY JOURNALS.

—LIFE ILLUSTRATED: A First-Class Pictorial Paper, weekly, \$2 a year; \$1 for half a year.... WATER CURE JOURNAL: Devoted to the Laws of Life and Health. \$1 a year.... PHRENOLOGICAL JOURNAL: Devoted to the Improvement of Mankind. \$1 a year. The three Journals sent one year for \$3. Address
FOWLER AND WELLS, No. 308 Broadway,
N. Y.

per package. If sent by mail, thirty cents must be added to pay postage.

SAML J. HINSDALE,
 Fayetteville, N. C.
 12 2t

Jan'y 15, 1857.

Scientific American,

ONE THOUSAND DOLLAR CASH PRIZES.
 The Twelfth Annual Volume of this useful publication commences on the 13th day of September next.

The "SCIENTIFIC AMERICAN" is an *Illustrated Periodical*, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of *practical science* is calculated to advance.

Reports of U. S. Patents granted are also published every week, including Official Copies of all the Patent Claims, together with news and information upon thousands of other subjects.

\$1000—IN CASH PRIZES—will be paid on the 1st of January next, for the largest list of subscribers, as follows:—\$200 for the 1st, \$175 for the 2nd, \$150 for the 3rd, \$125 for the 4th, \$100 for the 5th, \$75 for the 6th, \$50 for the 7th, \$40 for the 8th, \$30 for the 9th, \$25 for the 10th, \$20 for the 11th, and \$10 for the 12th. For all clubs of 20 and upwards, the subscription price is only \$1.40. Names can be sent from any Post Office until January 1st, 1857. Here are fine chances to secure cash prizes.

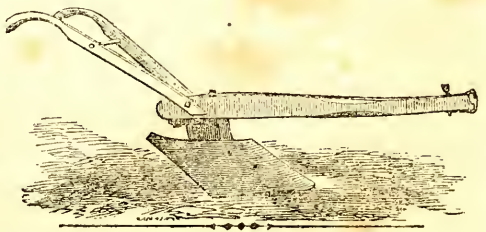
The SCIENTIFIC AMERICAN is published once a week; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with *several hundred original engravings*.

TERMS.—Single Subscriptions, \$2 a year, or \$1 for six months. Five copies, for six months, \$4; for a year, \$8. Specimen copies sent gratis. Southern, Western and Canada money, or Post Office Stamps, taken at par for subscriptions.

Letters should be directed (post paid) to
MUNN & CO.

128 Fulton Street, New York.

Messrs. MUNN & CO., are extensively engaged in procuring patents for new inventions, and will advise inventors, without charge, in regard to the novelty of their improvements.



VALUABLE CITY PROPERTY FOR SALE.

The subscriber offers for sale his former residence in the North-Western part of the City of Raleigh. It is pleasantly and beautifully situated, in a good neighborhood, convenient to the railroad Depot, and the building is commodious and constructed with conveniences for a large family. There are three acres in the lot, rich and highly productive, which, as the grounds lie well for several building lots, will be divided, or sold in whole, to suit purchasers, if early application be made.

The subscriber will also sell his present residence half a mile East of the Capitol, in the midst of the best society. The dwelling house is large, and pronounced by judges to be one of the best built houses in the City. The out houses are good and sufficiently numerous. The lot contains seven or eight acres of excellent land; and the place is universally admired as one of the most beautiful and desirable situations in or near the City. It will be exchanged, if desired, for land, provided the land and location should suit.

I will also sell 200 acres land 4 miles from Raleigh—a valuable market farm.

THOS. J. LEMAY.

Raleigh, Nov. 1st, 1857.

HOUSE TO RENT.

The house and lot, in the city, first mentioned in the foregoing advertisement, (remaining unsold,) is offered for rent.

T. J. LEMAY.

Raleigh, March 19, 1857.

CHINESE SUGAR CANE SEED.

THE SUBSCRIBER informs Planters and Farmers that he has obtained from John Kirkpatrick, Esq. of this county, his crop of seed of this valuable plant; some of the properties of which are said to be as follows:

First, an acre of the stalk properly cultivated, will yield from 400 to 500 gallons of pure syrup, equal to the best New Orleans.

Second. It surpasses all other plants for fodder and for feeding green to cattle or hogs, on account of the great abundance of sugary juice which it contains, and when sown in close drills yields an immense crop of fodder.

Third. It is so certain and prolific a crop, that planters may be sure of succeeding with it as a syrup plant any where South of the State of New York.

This seed is offered for sale in packages sufficient to plant half an acre 4 feet x 12 feet, at one dollar

CHINESE PROLIFIC PEA.

The great Forage Plant and Renovator of Southern Lands.

THIS very remarkable new Field Pea is by far the most valuable and productive variety produced. It is well adapted to poor land, yielding at least three or four times as much as any of the common varieties, and producing a growth of vine almost incredible. It grows in clusters of from 12 to 20 pod each pod containing 10 to 12 peas, and is of course far more easily gathered than any other.—The vine never becomes hard, but is soft and nutritious from the blossom to the root. It is greedily eaten by stock, and the Peas are unsurpassed for the table in delicacy and richness of flavor.

We subjoin the following extracts—the first from Ex-Governor Drew, of Arkansas, and the remainder from several well known citizens of South Bend, in the same State:

Fort Smith, Arkansas, December 20, 1856.

Dear Sir:—The evidences afforded me while at your house by an examination of the quantity of vine and peas gathered from one and a half acres of ground, is beyond anything in the way of a great yield I have ever known.

I think I am within bounds when I say the yield, in pea and vine, is at least five times greater than any other pea—clover, or grass for hay. And the waste peas were equal to any other full pea crop; and from the quantity of waste vines remaining on the ground, I think it will prove a fine manure and supporter of the soil.

Your son, Mr. Wm. F. Douglass, has done well in making arrangements for the extended culture of this invaluable Pea in the older States, where it will doubtless do more in re-instating the old worn-out lands than guano or any other application to the soil, while, at the same time, the yield is likely to be as great on such lands as on the rich bottoms of Arkansas.

Respectfully your ob't. serv't.,

THOS. S. DREW.

To ROBERT H. DOUGLASS, Esq.

Dr. Goree, of Arkansas, estimated the yield in Peas or Hay at "five times that of any other Field Pea he had ever seen planted." W. R. Lee, Esq., says he "has never seen anything to equal it," and that it should "supersede the use of every other," and the following certificate settles the question of its value for hay:

"We, the undersigned, saw "that pea-vine," and think, after the peas were gathered, that the vine would have made as much hay as a stout man could carry; it covered a space of ten or twelve feet in diameter, and lay from one foot to eighteen inches deep."

WM. C. MEEKS.

B. W. LEE.

South Bend, Arkansas, September, 1856.

Col. J. B. L. Marshall, assistant Engineer on the Little Rock and Napoleon Rail Road, says:

"If the Southern Farmers will give it a fair trial, they will find it to be the greatest Pea both for table use and for feeding stock, now known. They fatten hogs faster than anything I have ever tried. On the 1½ acres Mr. Douglass had in cultivation last year, there was at least four times as much vine as I ever saw on any piece of ground of the same size, &c., &c."

For further particulars, see Circulars furnished gratis by the Agents.

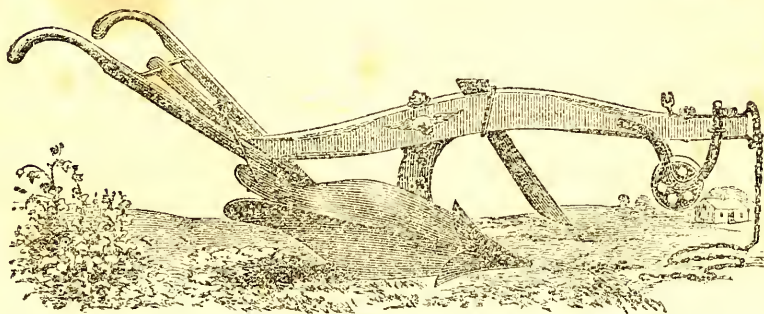
We are prepared to send out a limited quantity of these Peas, put up in cloth packages to go by mail.—They will be forwarded, free of postage, to any address on receipt of \$1.30 or otherwise at \$1 each.—Current funds and postage stamps will be a satisfactory remittance. Our names will be printed on all packages of the genuine seed.

Any one not perfectly satisfied with the Pea will have his money returned. Address (with plain directions for mailing)

PLUMB & LEITNER, Augusta, Georgia.

Dealers in Seeds and country merchants can be supplied, to a limited extent, at the usual discount if their orders are forwarded immediately.

Feb. 57.—2m's



WILLIAMS & HAYWOOD, RALEIGH, N. C.

WHOLESALE AND RETAIL DEALER IN
Drugs, Medicines and Chemicals.

DYE-WOODS & DYE-STUFFS,
Oils, Paints, and Painters' Articles,
VARNISHES,

WINDOW GLASS AND PUTTY, GLASSWARE,
French, English and American Perfumery,
Fine Toilet and Shaving Soaps,

Fine Tooth and Hair Brushes, Paint Brushes,
SURGICAL AND DENTAL INSTRUMENTS,

Trusses and Supporters of all kinds,
Spices, Snuffs, Manufactured Tobacco,

All the Patent or Proprietary Medicines of the Day
SUPERIOR INKS.

Pure Wines and Brandy for Medicinal Purposes,
Extracts for Flavoring,

Choice Toilet and Fancy Articles, etc.

We make our purchases on the most advantageous
terms, and offer goods equally as low as they can be
obtained from any similar establishment in this sec-
tion.

Warranted to be fresh, pure and genuine.

Orders from the country promptly filled, and satis-
faction guaranteed with regard to price and quality.

Physicians' Prescriptions will receive particular
attention at all hours of the day and night.

1-tf.

"Learn of the Mole to plough."—Pope.

WYCHE'S CULTIVATING PLOW, PAT-
ented 8th of January, 1856)—called the
Mole Plow; with vertical cutters near the edge of
a horizontal share, for dividing the furrow slice,
and a curved cutter on the rear of the share for
turning the whole in towards the plow, or as far on
the opposite side of the share as may be desired.
Adapted to siding, listing, breaking turfy or hard
land, subsoiling, and many other purposes. Is
light, cheap and strong; and supposed to be the
most perfect pulverizer in use.

For license to sell, with directions for manufac-
turing, address **W. E. WYCHE,**
Brookville, Granville Co., N. C.

June 16, 1856.

4-tf.

FARMER'S HALL, RALEIGH, N. C.



The subscriber is general agent for
the sale of Agricultural Implements
and Farming utensils, Field seeds,
Fertilizers, &c. &c. Almost all the
articles brought to the late Fair were kept on sale
and are offered at manufacturers prices with no cost
of transportation, as they were brought free by the
Railroad.

There is also a new fire proof Ware House on the
lot, in which all articles on consignment are stored.
The following are some of the articles brought to
the late Fair: Horse Powers, Wheat Fans, Corn
Drills, Field Rollers, Corn and Cob Crushers, Har-
rows, Cultivators, and Plows of every size and de-
scription.

JAMES M. TOWLES.

Raleigh, March 1, 1855.



Coach Making and Repairing.

THE UNDERSIGNED having taken the shop
known as **JENKINS' OLD STAND**, would announce
to the people of North Carolina generally, that he
is prepared to manufacture in a beautiful and du-
rable manner, Coaches, Buggies, Rockaways and
vehicles of every kind, at a price to suit the times

WAGON MAKING AND REPAIRING.

I am also prepared to make Wagons, Carts, &c.,
of every description, and as my facilities for re-
pairing are good, the public may rely upon having
their work done at the *lowest possible rates*, and in
a manner *unsurpassed* by any other establishment
in the State.

Give me a call and you will never regret it.

B. J. PERKINSON.

July 1st, 1856.

NOVELTY IRON WORKS!!!

Raleigh, North-Carolina,

MANUFACTURE of Horizontal, and Vertical
Steam Engines; Tabular, Flue, and Cylind-
rical Boilers, Circular, Vertical, and Potable Saw
Mills complete; Grist Mills, Car Building, &c. &c.
Iron & Brass Castings of all descriptions, includ-
ing ornamental railing, &c.

One of the Partners has been engaged in the
above business for a number of years, and has
turned out some of the best Engines and Saw
Mills in the State, which can be testified to by
many who have purchased of him.

We are also making preparation for the manu-
facturing of the most improved Plows, Harrows,
Cultivators and other Farming Implements. All
we ask is, that our friends will give us a fair trial,
and see if they cannot thereby not only save their
money at home, but a heavy tariff of transportation

SILAS BURNS & CO.

July, 1855.

W. L. POMEROY,

PUBLISHER.

BOOKSELLER & STATIONER,

RALEIGH, N. C.

CONSTANTLY ON HAND A LARGE ASSORTMENT OF
Theological, Law, Medical, Classical,
Miscellaneous

AND

SCHOOL BOOKS,

AMERICAN, ENGLISH, AND FRENCH STATIONERY,
BLANK BOOKS

Of every description, including RECEIPTS for every
purpose.

BOOKS BOUND IN PLAIN OR FINE STYLE.

JOB WORK executed with neatness and dis-
patch at this office.

